

Assignments for Dakota F.

Math:

- Complete 1 lesson per day

English:

- Read Chapters 1-41
- Complete all questions in packet
- You may work at your own pace

Personal Finance

- Complete all worksheets
- Work at your own pace

Psychology

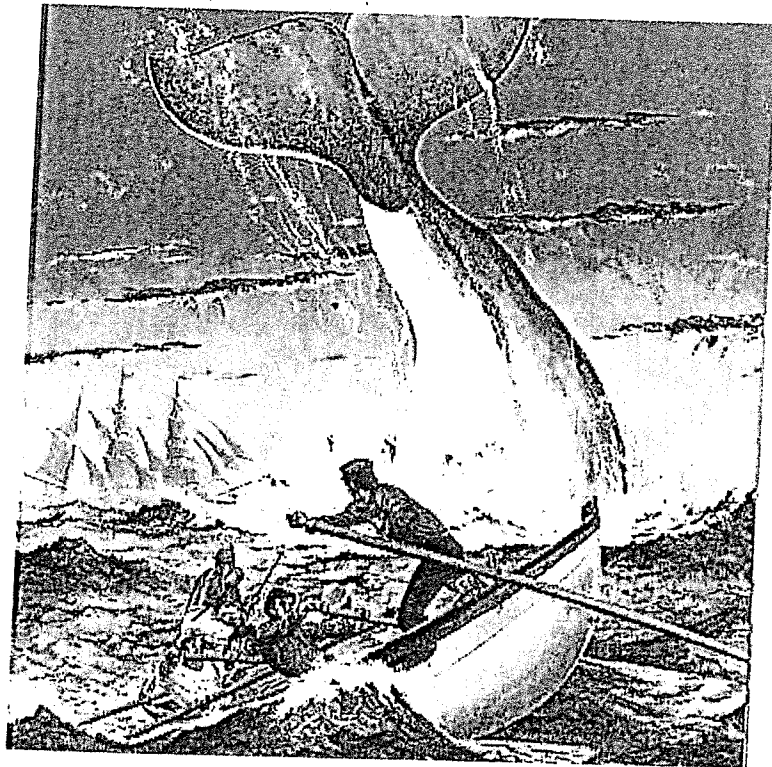
- Complete all worksheets
- Develop chart with opinions on student reactions to having 3 weeks off

English

English

Moby Dick

By Herman Melville



Moby Dick Pre-Reading Discussion

Directions: Discuss the following questions with a partner. Write down your thoughts as you both share your ideas. Be prepared to share your thoughts during class discussion time.

What do you know about whales? Have you ever seen one? Would you like to?

Have you ever been on a boat or ship? Describe your experience. If you haven't, what do you think being on a ship for a long time is like? Do you think you would enjoy it?

What could a whale symbolize in literature? What could the search for a whale symbolize?

Think about the characteristics of the ocean. What could the ocean symbolize in literature?

If you could go on an expedition, where would you go and what would you like to find out?

Moby Dick Reading Guide

This reading guide is designed to help you focus on various themes and passages as you read Moby Dick. I suggest you pre-read the guide before you begin each section. The questions will help you focus your reading and formulate your own questions and thoughts in relation to the text.

Etymology and Extracts

- Why does Melville begin his novel with “Etymology”?
- How do you interpret the source of “Extracts”?
- Is there an overall pattern to the extracts?
- What assumptions does Melville make about his readers?

Chapters 1 – 3

- Who is the biblical Ishmael? How would you characterize Ishmael? Why does he go to sea?
- What is the symbolic relevance of the story of Narcissus?
- How does Ishmael characterize New Bedford?
- How does Ishmael describe the Spouter Inn?
- What is your first impression of Queequeg?
- What philosophical principles enable Ishmael to quell his fears before they go to sleep?

Chapters 4 – 6

- What is the symbolic significance of the Counterpane?
- How do you interpret Ishmael’s dream and the supernatural hand?
- How does Ishmael’s view of Queequeg change? Why?
- How would you characterize the whaling industry?

Chapters 7 – 9

- What is Ishmael’s attitude toward religion and the afterlife?
- Does Ishmael want to believe in something divine? Why, or why not?
- In what ways does whaling pervade the discourse and religion in Mapple’s church?
- How would you characterize Mapple’s faith?
- What part of the story of Jonah does Mapple leave out? Why?

Chapters 10 – 15

- What effect does Queequeg have on Ishmael after the sermon?
- How does Ishmael respond to Mapple’s sermon?
- How would you characterize Ishmael’s and Queequeg’s relationship?
- Where is Kokovoko?
- What does Ishmael mean when he says, “It’s a joint-stock world”?

Chapters 16 – 18

- Why does Ishmael not heed the bad omens he sees?
- Why is Ishmael in charge of selecting the ship?
- What is distinctive about the ship, Pequod?
- Who was the biblical Ahab?
- How do you interpret Peleg's characterization of Ahab as a "grand, ungodly, god-like man"?
- What is the purpose of Queequeg's fasting?
- What is a Quohog?

Chapters 19 – 22

- What is the Biblical relationship between Elijah and Ahab?
- Does Ahab have a soul according to Elijah?
- Why does Ishmael pronounce Elijah "crazy" and then "in my heart, a humbug"?
- Why does Ishmael not treat the forebodings about Ahab seriously?
- How is Ishmael's second meeting with Elijah different from the first?

Chapters 23 – 32

- What is Bulkington's role in the novel? Why does Ishmael call him a "demigod"?
- What happens to Bulkington?
- How does Ishmael characterize the profession of whaling?
- Why is the whale-ship Ishmael's "Yale College and my Harvard"?
- What is Starbuck's flaw?
- Why is Stubb's pipe "a sort of disinfecting agent"?
- What is an Isolato?
- How is Ahab described? What does Ishmael think of him?

Chapters 33 – 36

- How do the mates proceed to supper? How do they disengage?
- Why is Flask "a butterless man"? Why does he always go hungry?
- What things do masthead standers look for?
- What happens to you while standing on the masthead?
- Why is Ishmael a lousy masthead stander?
- Why does the Platonist not spot any whales?
- How does Ahab attempt to win over Starbuck?
- How does Ahab win the men over? Why does Starbuck back down?

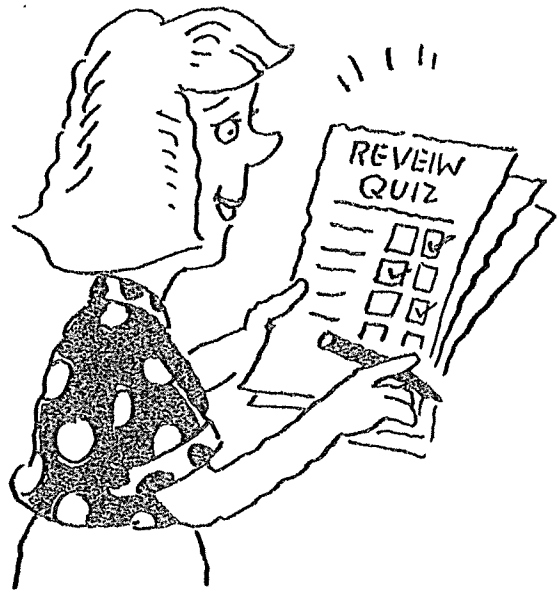
Chapters 37 – 41

- Why is Ahab "damned in the midst of Paradise"?
- What is Starbuck's predicament?
- Why does Ishmael go along with Ahab? Is he sympathetic to Ahab?

Personal Finance

160219
Hivore

Survival Skills Review



Matching

In the left-hand column below are some of the important words you've learned in this book. Match these words with the correct definitions on the right. Write the letter for the definition in the blank next to the word.

- _____ 1. punctuality
- _____ 2. goodwill
- _____ 3. quality
- _____ 4. strength
- _____ 5. appearance
- _____ 6. dependable
- _____ 7. concentrate
- _____ 8. reprimand
- _____ 9. tolerate
- _____ 10. quantity
- _____ 11. implement
- _____ 12. initiative
- _____ 13. socialize
- _____ 14. loyalty
- _____ 15. competition
- _____ 16. limitation
- _____ 17. imagination
- _____ 18. consumable
- _____ 19. cooperate
- _____ 20. durable
- _____ 21. safety
- _____ 22. gossip
- _____ 23. adjust
- _____ 24. communicate
- _____ 25. instructions

- A. something you're good at
- B. doing things without being told
- C. faithfulness
- D. creation of a new idea
- E. business rivalry
- F. restriction
- G. needing to be replaced often
- H. warn about inappropriate behavior
- I. long-lasting
- J. being on time
- K. work in harmony with others
- L. amount
- M. listening to or spreading rumors
- N. degree of excellence
- O. put into effect
- P. how you look
- Q. change
- R. pay close attention to
- S. exchange ideas
- T. written or oral directions
- U. reliable
- V. freedom from danger
- W. the value of a company's reputation
- X. being friendly with others
- Y. put up with

True or False

Read the following statements. Write T if the statement is true or F if the statement is false.

- _____ 1. When beginning a job, you should find out who to contact if an accident occurs.
- _____ 2. Very few occupations require an employee to have basic math skills.
- _____ 3. Maintaining good eye contact is important when speaking to a customer.
- _____ 4. Employers are not permitted to have regulations about length of hair of workers.
- _____ 5. Most employers will tolerate an employee who is absent an average of two days per month.
- _____ 6. Listening requires a person to concentrate and pay close attention to what is being said.
- _____ 7. OSHA can't shut down a company for violating safety standards.
- _____ 8. In most occupations it's not necessary for workers to be able to get along with other workers.
- _____ 9. High productivity means completing a large quantity of good-quality work.
- _____ 10. The military services offer training in many types of occupations.
- _____ 11. It's not important for unskilled workers to know company operating procedures.
- _____ 12. To make a sale, a salesperson may need to determine the customer's needs and wants.
- _____ 13. Criticizing your employer in front of friends or relatives may damage your company's reputation.
- _____ 14. A doctor can't detect high blood pressure during a routine physical examination.
- _____ 15. The first step in decision-making is determining the problem.
- _____ 16. Employers usually permit workers who complete tasks ahead of time to socialize with co-workers on the job.

- Now rewrite all the false statements to make them true.

Answer the questions below.

- ## SURVIVAL SKILLS REVIEW

2. What are six areas of personal appearance workers should examine?

3. What are seven guidelines an employee can follow in getting along with co-workers, supervisors, and the general public?

4. What are seven areas you can examine in maintaining good health?

Math Drill

Place the correct answers in the spaces provided below. Reduce to lowest terms whenever possible. Use extra sheets of paper to calculate answers if necessary.

1.
$$\begin{array}{r} 869 \\ + 47 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 37,642 \\ + 8,989 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 4,621 \\ + 975 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 38,416 \\ - 9,503 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 454,802 \\ - 398,525 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 39 \\ \times 7 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 986 \\ \times 45 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 3,841 \\ \times 862 \\ \hline \end{array}$$

9.
$$23 \overline{)486}$$

10.
$$982 \overline{)45,683}$$

11.
$$\begin{array}{r} 12.25 \\ + 6.80 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 539.82 \\ 75.9 \\ + 3.63 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 385.22 \\ 283.19 \\ + .65 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 86.28 \\ - 7.89 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 386.42 \\ - 98.85 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 76.2 \\ \times 8.6 \\ \hline \end{array}$$

17.
$$\begin{array}{r} 383.45 \\ \times 98.85 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 9,683.42 \\ \times 861.08 \\ \hline \end{array}$$

19.
$$9.2 \overline{)361.7}$$

20.
$$35.5 \overline{)863.75}$$

21.
$$\frac{5}{8} \times \frac{3}{4} =$$

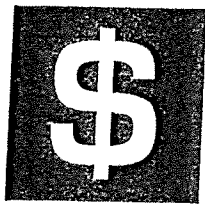
22.
$$4\frac{1}{3} \div \frac{3}{8} =$$

23.
$$\frac{4}{5} + \frac{9}{10} + \frac{1}{4} =$$

24.
$$3\frac{2}{5} + 28\frac{3}{8} =$$

25. $106\frac{5}{9} - 32\frac{1}{3} =$
26. $.25 = \underline{\hspace{1cm}}\%$
27. 20% of $50 = \underline{\hspace{1cm}}$
28. 200% of $36 = \underline{\hspace{1cm}}$
29. 5.2% of $130 = \underline{\hspace{1cm}}$
30. 20% of $.42 = \underline{\hspace{1cm}}$
31. 1 mile = $\underline{\hspace{1cm}}$ feet
32. $\underline{\hspace{1cm}}$ pints = 1 gallon
33. $\underline{\hspace{1cm}}$ pounds = 1 ton
34. $\underline{\hspace{1cm}}$ millimeters = 1 centimeter
35. $\underline{\hspace{1cm}}$ centiliters = 1 liter

Student Activities



Lesson Two

Making Money

name: _____

date: _____



assess your personal interests, abilities and career goals.

based on your personal situation, answer the following questions:

- 1:** What topics of study do or did you enjoy most in school?

- 2:** What skills do you do well? What do you feel to be your most distinguishing skill or area of specialty?

- 3:** What are your interests away from school or work?

- 4:** Describe a situation in which you helped organize the work of others.

- 5:** Describe a situation in which you worked with a team to achieve a goal.

- 6:** Describe the kind of job you might like.

based on your answers to the above items, describe two or three jobs that meet your criteria:

A.

B.

C.

name: _____

date: _____



evaluating the current employment market

Select two career areas that interest you. Using library information, the internet, and interviews with others, obtain answers to the following questions:

career 1

career 2

1. What are the general activities and duties of this job?

2. What are the physical surroundings, work hours, and mental and physical demands of this type of work?

3. What training and educational background is needed for this area of employment?

4. Will these career areas be in demand in the future?

5. What are the starting and advanced salaries for this industry?

6. What makes these careers attractive to you?

name: _____

date: _____



creating a resume

A resume is a personal data sheet commonly used to apply for a job. It lists your skills and experience so that future employers can see what you have already done and whether your experience meets the job's requirements. Fill out the following categories to assist you in preparing your resume.

education

degree/programs completed, school, location, areas of study, dates

work experience

title, organization, dates, responsibilities

other experience (*volunteer work, school, and community activities*)

title, organization, dates, responsibilities

honors/awards

title, organization, dates

name: _____

date: _____



read and interpret pay stubs

directions

Answer the following questions using the pay stubs on the following pages:

1. What is the name of Jane Brown's employer?
2. How much did Jane earn before taxes?
3. What is Jane's hourly wage?
4. List Jane's deductions.
5. What pay period does Peter Smith's check cover?
6. How much federal income tax has been taken out of Peter's check so far during 1999?
7. How much did Peter contribute to a retirement plan from this paycheck?
8. How much is Peter's take-home pay?
9. Where does Mary Stone work?
10. How much is Mary's salary?
11. How much money was deducted from Mary's paycheck?
12. How much has Mary been paid in total during 1999?



read and interpret pay stubs

HAMBURGER PALACE ENTERPRISES, INC.

NAME PAYROLL ENDING CHECK NO.
JANE BROWN 3/14/09 9343

EMPLOYEE NO. AMOUNT
L4325 \$87.50

EARNINGS			TAXES WITHHELD			OTHER DEDUCTIONS	
Description	Hrs.	Amount	Tax	Current	YTD	Description	Amount
Regular	20	120.00	Fed Income Tax	12.72	174.90	MEALS	7.00
			Social Sec	7.44	102.30		
			Medicare	1.74	23.93		
			State Income Tax	3.60	49.50		
CURRENT		120.00					
YTD		1650.00					

THE BANANA BREADBOX

EMPLOYEE PETER SMITH
SSN 999-99-9999
PAY PERIOD 8/06/09 TO 8/12/09
PAY DATE 8/15/09
CHECK NO. 3259
NET PAY \$182.41

EARNINGS			TAXES WITHHELD			OTHER DEDUCTIONS	
Description	Hrs.	Amount	Tax	Current	YTD	Description	Amount
Regular	40	140.00	Fed Income Tax	35.28	429.84	401(K)	30.00
Overtime	6	54.00	Social Sec	18.23	222.08	HEALTH	15.00
Current		194.00	Medicare	4.26	51.94		
YTD		3582.00	State Income Tax	8.82	107.46		

read and interpret pay stubs (continued)

EMPLOYEE Mary Stone
EMPLOYEE # A5926
PAY PERIOD 7/01/09 TO 7/15/09
PAY DATE 7/14/09
CHECK NO. 3691215
NET PAY \$349.21

DANCE-O-RAMA

EARNINGS			TAXES WITHHELD			OTHER DEDUCTIONS	
Description	Hrs.	Amount	Tax	Current	YTD	Description	Amount
Regular		448.00	Fed Income Tax	49.95	385.62		
Salary			Social Sec	27.79	361.09		
Current		448.00	Medicare	6.50	84.45		
YTD		5824.00	State Income Tax	14.56	182.28		



lesson two quiz: making money

true-false

1. _____ The career planning process starts with assessing your personal interests, abilities, and goals.
2. _____ Interviewing is the final phase of the career planning process.
3. _____ Travel costs to work are considered to be "hidden" job costs.
4. _____ Worker's compensation is a common employee benefit received by most workers.
5. _____ Gross pay results from deducting various deductions from your earnings.

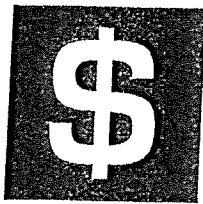
multiple choice

6. _____ The first phase of the career planning process is to:
 - A. identify specific job opportunities.
 - B. interview for available positions.
 - C. assess personal interests and abilities.
 - D. apply for employment positions.
7. _____ After applying for an available position, the next step usually involves:
 - A. interviewing.
 - B. obtaining training for necessary skills.
 - C. comparing employee benefits.
 - D. preparing a personal data sheet (resume).
8. _____ A hidden cost of a job might involve:
 - A. gross pay.
 - B. uniform fees.
 - C. employee discounts.
 - D. retirement benefits.
9. _____ Which of the following employee benefits would a working parent find most useful?
 - A. stock options
 - B. tax deferred retirement plan
 - C. Social Security benefits
 - D. parental leave
10. _____ A common deduction on a person's pay stub would be:
 - A. gross pay.
 - B. unemployment tax.
 - C. federal income tax.
 - D. excise tax.

case application

Sue Smith has worked for nine years in retail sales. She is considering going back to school to change career fields. What factors should be considered before making this decision?

Student Activities



Lesson Two

Making Money

Practical Money Skill

for life

name: _____

date: _____



assess your personal interests, abilities and career goals.

based on your personal situation, answer the following questions:

- 1:** What topics of study do or did you enjoy most in school?

- 2:** What skills do you do well? What do you feel to be your most distinguishing skill or area of specialty?

- 3:** What are your interests away from school or work?

- 4:** Describe a situation in which you helped organize the work of others.

- 5:** Describe a situation in which you worked with a team to achieve a goal.

- 6:** Describe the kind of job you might like.

based on your answers to the above items, describe two or three jobs that meet your criteria:

A.

B.

C.

name: _____

date: _____



evaluating the current employment market

Select two career areas that interest you. Using library information, the internet, and interviews with others, obtain answers to the following questions:

career 1

career 2

1. What are the general activities
and duties of this job?

2. What are the physical
surroundings, work hours,
and mental and physical
demands of this type of work?

3. What training and educational
background is needed for this
area of employment?

4. Will these career areas be in
demand in the future?

5. What are the starting
and advanced salaries for
this industry?

6. What makes these careers
attractive to you?

name: _____

date: _____



creating a resume

A resume is a personal data sheet commonly used to apply for a job. It lists your skills and experience so that future employers can see what you have already done and whether your experience meets the job's requirements. Fill out the following categories to assist you in preparing your resume.

education

degree/programs completed, school, location, areas of study, dates

work experience

title, organization, dates, responsibilities

other experience (*volunteer work, school, and community activities*)

title, organization, dates, responsibilities

honors/awards

title, organization, dates

name: _____

date: _____



read and interpret pay stubs

directions

Answer the following questions using the pay stubs on the following pages:

1. What is the name of Jane Brown's employer?
2. How much did Jane earn before taxes?
3. What is Jane's hourly wage?
4. List Jane's deductions.
5. What pay period does Peter Smith's check cover?
6. How much federal income tax has been taken out of Peter's check so far during 1999?
7. How much did Peter contribute to a retirement plan from this paycheck?
8. How much is Peter's take-home pay?
9. Where does Mary Stone work?
10. How much is Mary's salary?
11. How much money was deducted from Mary's paycheck?
12. How much has Mary been paid in total during 1999?



lesson two quiz: making money

true-false

1. ____ The career planning process starts with assessing your personal interests, abilities, and goals.
2. ____ Interviewing is the final phase of the career planning process.
3. ____ Travel costs to work are considered to be "hidden" job costs.
4. ____ Worker's compensation is a common employee benefit received by most workers.
5. ____ Gross pay results from deducting various deductions from your earnings.

multiple choice

6. ____ The first phase of the career planning process is to:
 - A. identify specific job opportunities.
 - B. interview for available positions.
 - C. assess personal interests and abilities.
 - D. apply for employment positions.
7. ____ After applying for an available position, the next step usually involves:
 - A. interviewing.
 - B. obtaining training for necessary skills.
 - C. comparing employee benefits.
 - D. preparing a personal data sheet (resume).
8. ____ A hidden cost of a job might involve:
 - A. gross pay.
 - B. uniform fees.
 - C. employee discounts.
 - D. retirement benefits.
9. ____ Which of the following employee benefits would a working parent find most useful?
 - A. stock options
 - B. tax deferred retirement plan
 - C. Social Security benefits
 - D. parental leave
10. ____ A common deduction on a person's pay stub would be:
 - A. gross pay.
 - B. unemployment tax.
 - C. federal income tax.
 - D. excise tax.

case application

Sue Smith has worked for nine years in retail sales. She is considering going back to school to change career fields. What factors should be considered before making this decision?

Math

40M

Functions as Ordered Pairs

EXAMPLE

Is this set of ordered pairs a function?

$(5, 4), (7, 2), (9, 0), (11, -2)$

The set of ordered pairs is a function because no x -coordinates have been repeated.

Directions Tell whether the sets of ordered pairs are functions or not.

Write *yes* or *no* and explain your answer.

1. $(1, 0), (4, 2), (7, 4), (10, 6)$

4. $(9, -2), (8, 1), (7, 4), (6, 7)$

2. $(5, -2), (5, -1), (5, 0), (5, 1)$

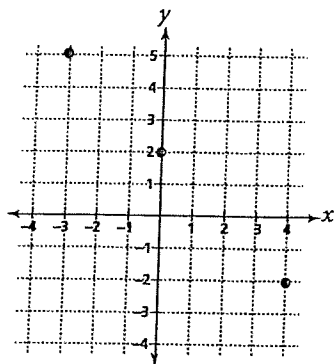
5. $(0, 0), (-1, 2), (1, 0), (1, 2)$

3. $(-3, 3), (-2, 2), (-1, 1), (0, 0)$

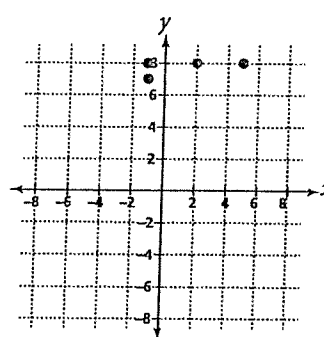
Directions If a vertical line passes through two or more points of a graph, the graph does not represent a function. Use this vertical line test to determine if the graph is a function or not.

Write *yes* or *no*.

6.



7.


EXAMPLE

Write the domain and range of this function.

$(7, -2), (1, 4), (3, 6), (-4, -1)$

The domain is 7, 1, 3, -4. The range is -2, 4, 6, -1.

Directions Write the domain and range for each function below.

8. $(1, -2), (0, 2), (-1, 6), (-2, 10)$ _____

10. $(0, 4), (2, -1), (4, -6), (-2, 8)$ _____

9. $(5, 0), (3, -2), (1, -4), (-1, -6)$ _____

Functions as a Rule

EXAMPLECalculate $f(x)$ for the given domain values.

$f(x) = 3x; x = 1, 3, 8, 10, 100$

$f(x) = 3, 9, 24, 30, 300$ for the given domain values.

Directions Calculate $f(x)$ for the given domain values.

1. $f(x) = 5x; x = 4, 6, 8, 10, 20$

2. $f(x) = -3x; x = 0, -1, -2, -3, -4$

3. $f(x) = \frac{1}{6}x; x = 6, 12, -12, -42, 60$

4. $f(x) = 5x + 2; x = 0, 1, 2, 3, 4$

5. $f(x) = 7x - 11; x = 3, 6, 9, 12, 15$

6. $f(x) = \frac{1}{2}x - 5; x = 0, 4, 10, 50, -100$

7. $f(x) = 4x + 8; x = 1, 11, 21, 31, 101$

8. $f(x) = -2x - 14; x = -1, -5, -10, -15, 12$

9. $f(x) = \frac{1}{3}x + 22; x = 9, 6, 3, 0, -3$

10. $f(x) = \frac{7}{8}x - 12; x = 16, 24, 48, -8, -64$

EXAMPLE

Choose any number; then multiply it by 7.

 $f(x) = 7x$ is a rule in function notation for the example above.The reason that it is a function is that each x has one and only one $7x$.**Directions** Write a rule using function notation, $f(x) = \underline{\hspace{2cm}}$.

Then give a reason why it is a function.

11. Choose any number; then divide it by 6.

12. Choose any number; then multiply it by 4.

13. Choose any number; multiply it by 3, then add 15.

14. Choose any number; then subtract 9.

15. Choose any number; then divide it by -2 .16. Choose any number; then multiply it by -5 .17. Choose any number; multiply it by -8 , then subtract 7.

18. Choose any number; divide it by 3, then add 13.

19. Choose any number; multiply it by 4, then subtract 52.

Directions Solve the problem.

20. Each month Daisy shoots eight rolls of film. Write a rule that shows how many rolls of film she shoots for a given number of months.

Write the rule in function notation.

Zeros of a Function

EXAMPLE $f(x) = 3x - 6$ Find the zeros of $f(x)$.Let $f(x) = 0$ and solve for x .

$$0 = 3x - 6$$

$$6 = 3x$$

$$2 = x$$

Check: $f(2) = 3(2) - 6$

$$f(2) = 6 - 6$$

$$f(2) = 0$$

Directions Find the zeros of $f(x)$.

- | | | | |
|-------------------------------|-------|----------------------------------|-------|
| 1. $f(x) = -2x + 12$ | _____ | 16. $f(x) = \frac{2}{7}x - 4$ | _____ |
| 2. $f(x) = \frac{2}{5}x - 10$ | _____ | 17. $f(x) = x^3 - 125$ | _____ |
| 3. $f(x) = 4x - 4$ | _____ | 18. $f(x) = \frac{3}{4}x + 12$ | _____ |
| 4. $f(x) = \frac{1}{3}x - 9$ | _____ | 19. $f(x) = 10x + 25$ | _____ |
| 5. $f(x) = x + 8$ | _____ | 20. $f(x) = x^3 - 27$ | _____ |
| 6. $f(x) = x^2 - 64$ | _____ | 21. $f(x) = 2x + 10$ | _____ |
| 7. $f(x) = \frac{1}{4}x + 3$ | _____ | 22. $f(x) = \frac{1}{10}x + 100$ | _____ |
| 8. $f(x) = 5x - 10$ | _____ | 23. $f(x) = 7x + 91$ | _____ |
| 9. $f(x) = -x - 8$ | _____ | 24. $f(x) = 6x + 15$ | _____ |
| 10. $f(x) = 6x + 42$ | _____ | 25. $f(x) = \frac{10}{21}x - 1$ | _____ |
| 11. $f(x) = 9x - 9$ | _____ | 26. $f(x) = 30x - 450$ | _____ |
| 12. $f(x) = 7x - 3$ | _____ | 27. $f(x) = x^4 - 81$ | _____ |
| 13. $f(x) = \frac{3}{8}x - 1$ | _____ | 28. $f(x) = \frac{1}{6}x + 2$ | _____ |
| 14. $f(x) = x^2 - 81$ | _____ | 29. $f(x) = 15x + 75$ | _____ |
| 15. $f(x) = 8x + 4$ | _____ | 30. $f(x) = x^5 - 32$ | _____ |

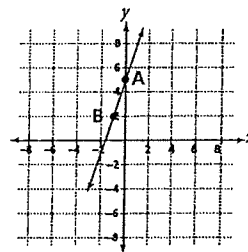
Graphs of Linear Functions

EXAMPLEGraph $f(x) = 3x + 5$.**Step 1** Let $x = 0$.

$$f(0) = 3(0) + 5 = 5 \rightarrow (0, 5) \text{ is point A.}$$

 $y = 5$ is the y -intercept.**Step 2** Let $x = -1$.

$$f(-1) = 3(-1) + 5 = 2 \rightarrow (-1, 2) \text{ is point B.}$$

Step 3 Graph the two points; then draw theline $y = f(x) = 3x + 5$.**Directions** Graph each linear function and label the y -intercept.(Use graph paper. Label the x - and y -axes first.)

- | | |
|------------------------------|--------------------------------|
| 1. $f(x) = 2x$ | 11. $f(x) = \frac{2}{7}x$ |
| 2. $f(x) = 3x + 2$ | 12. $f(x) = 4x - 5$ |
| 3. $f(x) = -4x$ | 13. $f(x) = -\frac{1}{5}x + 3$ |
| 4. $f(x) = 2x - 4$ | 14. $f(x) = x + 10$ |
| 5. $f(x) = 5x + 1$ | 15. $f(x) = \frac{1}{4}x - 6$ |
| 6. $f(x) = \frac{1}{4}x$ | 16. $f(x) = 6x + 6$ |
| 7. $f(x) = -3x - 8$ | 17. $f(x) = \frac{7}{10}x$ |
| 8. $f(x) = 2x + 7$ | 18. $f(x) = 10x - 8$ |
| 9. $f(x) = \frac{3}{8}x + 2$ | 19. $f(x) = \frac{1}{5}x + 2$ |
| 10. $f(x) = 5x - 2$ | 20. $f(x) = 8x + 8$ |

The Slope of a Line, Parallel Lines

EXAMPLE

Calculate the slope of $f(x) = 3x + 4$.

Step 1 Find two points.

$$f(1) = 3(1) + 4 = 7 \rightarrow (1, 7) \text{ is point 1.}$$

$$f(0) = 3(0) + 4 = 4 \rightarrow (0, 4) \text{ is point 2.}$$

Step 2 Calculate $m = \frac{(y_1 - y_2)}{(x_1 - x_2)}$.

$$m = \frac{(7 - 4)}{(1 - 0)} = \frac{3}{1} = 3$$

$$m = 3$$

Directions Calculate the slope of each line. Remember, $m = \frac{(y_1 - y_2)}{(x_1 - x_2)}$.

1. $f(x) = x + 5$ _____

2. $f(x) = 4x - 2$ _____

3. $f(x) = -3x$ _____

4. $f(x) = 5x$ _____

5. $f(x) = -2x - 7$ _____

6. $f(x) = \frac{1}{2}x$ _____

7. $f(x) = \frac{3}{7}x + 5$ _____

8. $f(x) = -7x - 2$ _____

9. $f(x) = -\frac{2}{9}x + 1$ _____

10. $f(x) = x - 6$ _____

11. $f(x) = \frac{2}{5}x + 1$ _____

12. $f(x) = 2\frac{1}{2}x + 6$ _____

13. $f(x) = -4x - 9$ _____

14. $f(x) = -\frac{1}{15}x + 3$ _____

15. $f(x) = 10x - 1$ _____

16. $f(x) = -15x - 25$ _____

17. $f(x) = \frac{2}{15}x + 8$ _____

18. $f(x) = -4x - 11$ _____

19. $f(x) = -\frac{8}{11}x + 5$ _____

20. $f(x) = 18x + 1$ _____

EXAMPLE

Given $f(x) = 5x$ and $g(x) = 5x - 4$, show that the lines are parallel by showing that their slopes are equal.

$$f(1) = 5(1) = 5 \rightarrow (1, 5) \text{ is point 1.}$$

$$f(0) = 5(0) = 0 \rightarrow (0, 0) \text{ is point 2.}$$

$$m = \frac{(5 - 0)}{(1 - 0)} = \frac{5}{1}$$

$$m = 5$$

$$g(1) = 5(1) - 4 = 1 \rightarrow (1, 1) \text{ is point 1.}$$

$$g(0) = 5(0) - 4 = -4 \rightarrow (0, -4) \text{ is point 2.}$$

$$m = \frac{(1 - (-4))}{(1 - 0)} = \frac{5}{1}$$

$$m = 5$$

Directions Show that the lines are parallel by showing that their slopes are equal.

21. $f(x) = 2x + 5$ and $g(x) = 2x$ _____

23. $f(x) = \frac{1}{3}x - 4$ and $g(x) = \frac{1}{3}x + 4$ _____

22. $f(x) = -6x$ and $g(x) = -6x + 7$ _____

24. $f(x) = -x + 100$ and $g(x) = -x - 8$ _____

Directions Solve the problem.

25. A hill has a height of 450 feet. The horizontal distance covered between the bottom of the hill and the top is 1,800 feet. Find the slope of the hill.

The Formula $f(x) = y = mx + b$

EXAMPLE

$5x + y = 2$

Change to $y = mx + b$. Give m and b .Solution: Subtract $5x$ from both sides.

$y = -5x + 2$

$m = -5, y\text{-intercept} = 2$

Directions Change the given equation to the form $y = mx + b$.
Give the value of m and b .

1. $2x + 4y = 8$ _____

2. $-2x + y = 1$ _____

3. $-4x + 4y = 4$ _____

4. $-x + 3y = 9$ _____

5. $3x + y = -7$ _____

6. $-2x + 2y = 2$ _____

7. $x - 4y = 2$ _____

8. $-3x + 6y = 12$ _____

9. $4x + 8 = y$ _____

10. $-6x + 10 = y$ _____

11. $-6x - 3y = 9$ _____

12. $-\frac{1}{3}x + 6y = 2$ _____

13. $\frac{2}{5}x + \frac{1}{5}y = 5$ _____

14. $-x + \frac{1}{3}y = 4$ _____

15. $-3x + \frac{1}{5}y = -4$ _____

16. $2x + \frac{1}{5}y = 0$ _____

17. $x - \frac{1}{10}y = 1$ _____

18. $\frac{1}{5}x + 2y = 8$ _____

19. $-10x + 8 = 5y - 2$ _____

20. $\frac{1}{3}x + 9 = \frac{1}{3}y + 6$ _____

21. $-x + \frac{3}{4}y = -2$ _____

22. $-6x + 9y = 3$ _____

23. $x + \frac{1}{8}y = -4$ _____

24. $-3x - y = 6$ _____

25. $\frac{1}{2}x + 2y = 8 - 2y$ _____

26. $x + \frac{1}{6}y = 6$ _____

27. $-\frac{1}{10}x + y = 10$ _____

28. $-12x - 4y = 2y + 3$ _____

29. $-x + y = 0$ _____

30. $-x + y = 2$ _____

The Distributive Law—Multiplication

EXAMPLE

$$6(x - y) = 6x - 6y$$

Directions Multiply, using the distributive law.

1. $3(8 + 2)$ _____

2. $6(x + y)$ _____

3. $a(b + c)$ _____

4. $x(a + b - c)$ _____

5. $x(3x + 9)$ _____

6. $y(x + y^3)$ _____

7. $x(a - b - c)$ _____

8. $x^2(x^3 + y^3)$ _____

9. $x^4(x + z - y)$ _____

10. $x^3(5x^3 + x^2)$ _____

EXAMPLE

$$(2 + 7)(y - x) = 2y - 2x + 7y - 7x \\ = 9y - 9x$$

Directions Multiply, using the distributive law twice. Simplify by adding like terms.

11. $(6 + 4)(a - b)$ _____

12. $(a - 2)(a + 4)$ _____

13. $(x + y)(a - b)$ _____

14. $(x + 3)(x + 5)$ _____

15. $(y + 4)(y - 4)$ _____

16. $(2a + 4)(a + 5)$ _____

17. $(x - y)(y - x)$ _____

18. $(a + 2b)(4a + b)$ _____

19. $(a + b)(a - b)$ _____

20. $(x - y)(3x + 3y)$ _____

EXAMPLE

$$(x + 3)(x - y + 8) = \\ x^2 - xy + 8x + 3x - 3y + 24 = \\ x^2 - xy + 11x - 3y + 24$$

Directions Multiply.

21. $(x - 5)(x - y + 4)$ _____

22. $(x + y)(6x + y - z)$ _____

23. $(x + y)(3x^2 + 4y + 7)$ _____

24. $(x - 4)(4x + y + z)$ _____

25. $(a - b)(3a + 6b + ab)$ _____

26. $(a + b)(a^3 - b^2 + 1)$ _____

27. $(a - b)(a + 2b - 4ab)$ _____

28. $(x + 3)(3x - y + 8)$ _____

29. $(x + 4y)(x - y + xy)$ _____

30. $(x + y)(x + y - 10)$ _____

The Distributive Law—Factoring

EXAMPLES

$$rb + rc = r(b + c)$$

$$3yx^2 + 6yx - 9y^2 = 3y(x^2 + 2x - 3y)$$

Directions Factor the expressions by finding the common factor(s) first.

1. $kl + kj$ _____

2. $9x + 6y$ _____

3. $x^2 - xy - x$ _____

4. $xb - xc + xd$ _____

5. $2x^2 - 6xy + 4x$ _____

6. $ab - ac + a^3$ _____

7. $axy - xy^2$ _____

8. $5xy + 10xya$ _____

9. $4x^2y + 12xy + 10y^2$ _____

10. $g^2 + g^3$ _____

EXAMPLE

Factor $x^2 + 6x + 9$.

Step 1 $x^2 + 6x + 9 = (x + \underline{\hspace{1cm}})(x + \underline{\hspace{1cm}})$

Step 2 The factors of 9 are 3 and 3; 1 and 9; -3 and -3; and -1 and -9.
So the possible factors for $x^2 + 6x + 9$ include
 $(x + 3)(x + 3)$; $(x + 1)(x + 9)$; $(x - 3)(x - 3)$; and $(x - 1)(x - 9)$.

Step 3 Substitute each set of factors in the product and check.

$$\begin{aligned} x^2 + 6x + 9 &= (x - 1)(x - 9) \\ &= x(x - 9) - 1(x - 9) \\ &= x^2 - 9x - x + 9 \\ &= x^2 - 10x + 9 \text{ Incorrect.} \end{aligned}$$

$$\begin{aligned} x^2 + 6x + 9 &= (x + 3)(x + 3) \\ &= x(x + 3) + 3(x + 3) \\ &= x^2 + 3x + 3x + 9 \\ &= x^2 + 6x + 9 \text{ Correct.} \end{aligned}$$

Directions Factor, using the model $(x + \underline{\hspace{1cm}})(x + \underline{\hspace{1cm}})$.

Check by multiplying.

11. $x^2 + 7x + 6$ _____

12. $x^2 + x - 6$ _____

13. $x^2 + 8x + 15$ _____

14. $x^2 - 2x - 15$ _____

15. $x^2 + 2x - 8$ _____

16. $x^2 + 3x - 18$ _____

17. $x^2 - 25$ _____

18. $x^2 + 6x + 5$ _____

19. $x^2 + 6x - 7$ _____

20. $x^2 - 10x + 25$ _____

Solutions to $ax^2 + bx = 0$

EXAMPLESolve for x and check: $2x^2 + 8x = 0$.**Step 1** Factor: $2x^2 + 8x = 0 \rightarrow 2x(x + 4) = 0$ **Step 2** Set each factor equal to 0 and solve for x :

$$2x = 0 \text{ or } x + 4 = 0$$

$$x = 0 \text{ or } x = -4$$

Check:

$$x = 0, 2x^2 + 8x = 0 \rightarrow 2(0)^2 + 8(0) = 0 + 0 = 0$$

$$x = -4, 2x^2 + 8x = 0 \rightarrow 2(-4)^2 + 8(-4) = 32 - 32 = 0$$

Directions Solve for x and check.

- | | | | |
|-----------------------|-------|----------------------|-------|
| 1. $x^2 + 12x = 0$ | _____ | 16. $6x^2 - 21x = 0$ | _____ |
| 2. $x^2 - 3x = 0$ | _____ | 17. $2x^2 + 40x = 0$ | _____ |
| 3. $x^2 - 10x = 0$ | _____ | 18. $3x^2 + 30x = 0$ | _____ |
| 4. $x^2 + 25x = 0$ | _____ | 19. $4x^2 - 36x = 0$ | _____ |
| 5. $x^2 - 13x = 0$ | _____ | 20. $5x^2 - 45x = 0$ | _____ |
| 6. $x^2 - 7x = 0$ | _____ | 21. $2x^2 + 48x = 0$ | _____ |
| 7. $x^2 - 19x = 0$ | _____ | 22. $3x^2 + 48x = 0$ | _____ |
| 8. $x^2 + 23x = 0$ | _____ | 23. $4x^2 - 52x = 0$ | _____ |
| 9. $x^2 + 36x = 0$ | _____ | 24. $5x^2 + 75x = 0$ | _____ |
| 10. $x^2 - 45x = 0$ | _____ | 25. $6x^2 - 90x = 0$ | _____ |
| 11. $2x^2 - 8x = 0$ | _____ | 26. $12x^2 - 6x = 0$ | _____ |
| 12. $3x^2 - 15x = 0$ | _____ | 27. $20x^2 + 4x = 0$ | _____ |
| 13. $4x^2 + 4x = 0$ | _____ | 28. $15x^2 - 3x = 0$ | _____ |
| 14. $10x^2 - 25x = 0$ | _____ | 29. $24x^2 + 6x = 0$ | _____ |
| 15. $8x^2 + 16x = 0$ | _____ | 30. $35x^2 + 7x = 0$ | _____ |

Solutions to $x^2 + bx + c = 0$ by Factoring

EXAMPLESolve for x by factoring $x^2 + 7x + 10 = 0$. Then check.**Step 1** Factor: $x^2 + 7x + 10 = 0$

$$(x + \underline{\quad})(x + \underline{\quad}) = 0 \quad \text{Think: Factors of 10 are 2, 5, 1, 10.}$$

$$(x + 2)(x + 5) = 0$$

Step 2 Set each factor equal to 0: $x + 2 = 0$ or $x + 5 = 0$

Solve for x : $x = -2$ or $x = -5$

Check:

$$x = -2, x^2 + 7x + 10 = 0 \rightarrow (-2)^2 + 7(-2) + 10 = 4 - 14 + 10 = 0$$

$$x = -5, x^2 + 7x + 10 = 0 \rightarrow (-5)^2 + 7(-5) + 10 = 25 - 35 + 10 = 0$$

Directions Solve for x by factoring. Check your answers.

1. $x^2 + 2x - 8 = 0$ _____

2. $x^2 + 2x - 15 = 0$ _____

3. $x^2 - 6x + 9 = 0$ _____

4. $x^2 + 3x - 18 = 0$ _____

5. $x^2 + 4x - 21 = 0$ _____

6. $x^2 - 10x + 25 = 0$ _____

7. $x^2 + 9x + 14 = 0$ _____

8. $x^2 + 3x - 10 = 0$ _____

9. $x^2 + 5x - 6 = 0$ _____

10. $x^2 + 6x - 27 = 0$ _____

11. $x^2 + 11x - 26 = 0$ _____

12. $x^2 + 12x + 35 = 0$ _____

13. $x^2 + 14x + 45 = 0$ _____

14. $x^2 + 2x - 80 = 0$ _____

15. $x^2 + 20x + 100 = 0$ _____

16. $x^2 - 6x - 55 = 0$ _____

17. $x^2 - 8x - 33 = 0$ _____

18. $x^2 + 8x - 65 = 0$ _____

19. $x^2 - 13x + 36 = 0$ _____

20. $x^2 - 14x + 40 = 0$ _____

21. $x^2 + 30x + 29 = 0$ _____

22. $x^2 - 9x - 52 = 0$ _____

23. $x^2 + 16x + 64 = 0$ _____

24. $x^2 + 19x + 84 = 0$ _____

25. $x^2 - 20x - 69 = 0$ _____

26. $x^2 + 3x - 70 = 0$ _____

27. $x^2 + 17x + 30 = 0$ _____

28. $x^2 - x - 56 = 0$ _____

29. $x^2 - x - 72 = 0$ _____

30. $x^2 - 3x - 108 = 0$ _____

Psychology

ypolodivz

Name: _____ Class: _____

The Bright Side of Sadness

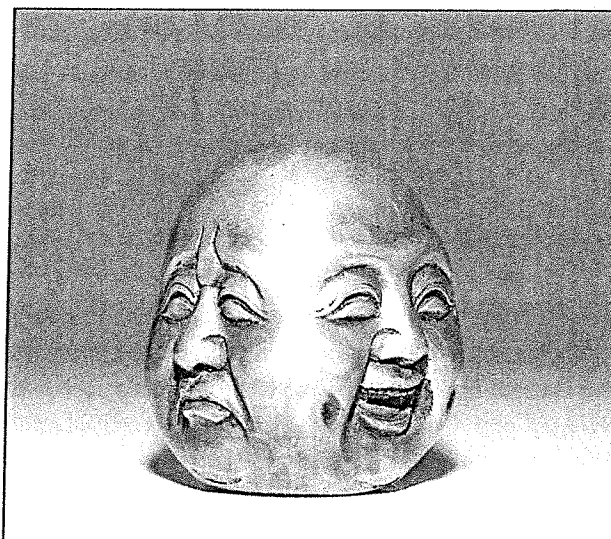
Bad moods can have unappreciated mental upsides

By Bruce Bower
2013

When given a choice, most people would choose to feel happy rather than sad. In this Science News article, author Bruce Bower explores the results of several recent studies about the benefits of sadness. As you read, identify how negative emotions can affect a person's decision-making and success in personal and professional life.

- [1] Thomas Jefferson defended the right to pursue happiness in the Declaration of Independence. But that's so 237 years ago. Many modern societies champion everyone's right to be happy pretty much all the time.

Good luck with that, says psychologist Joseph Forgas of the University of New South Wales in Sydney. A lack of close friends, unfulfilled financial dreams and other harsh realities leave many people feeling lonely and forlorn a lot of the time. But there's a mental and social upside to occasional downers that often goes unappreciated.



"4 Faces Buddha" by Manuel Bahamondez is licensed under CC BY 2.0.

"Bad moods are seen in our happiness-focused culture as representing a problem, but we need to be aware that temporary, mild negative feelings have important benefits," Forgas says.

Growing evidence suggests that gloomy moods improve key types of thinking and behavior, Forgas asserts in a new review paper aptly titled "Don't worry, be sad!" For good evolutionary reasons, positive and negative moods subtly recruit thinking styles suited to either benign¹ or troubling situations, he says. Each way of dealing with current circumstances generally works well, if imperfectly.

- [5] New and recent studies described by Forgas in the June *Current Directions in Psychological Science* illustrate some of the ways in which periods of sadness spontaneously recruit a detail-oriented, analytical thinking style. Morose² moods have evolved as early-warning signs of problematic or dangerous situations that demand close attention, these reports suggest.

1. **Benign** (*adjective*): mild and favorable; gentle or friendly
2. **Morose** (*adjective*): sullen and ill-tempered; miserable or depressed

One investigation found that people in sad moods have an advantage remembering the details of unusual incidents that they have witnessed. And a little gloominess could help job applicants; lousy moods cut down on the tendency to stereotype others, thus boosting the accuracy of first impressions. People in sad moods also show a greater willingness to work on demanding tasks, communicate more persuasively and are more concerned with being fair to others than are peers in neutral or happy moods.

Alternatively, good moods trigger a loose mode of thought conducive³ to creativity and seeing the big picture. Happiness signals that a situation is safe, or at least not immediately threatening, Forgas suggests. As a result, people in a cheery state have the luxury of focusing on themselves rather than on their environments.

Whether good or bad, moods are relatively low-intensity, background feelings that can last for anywhere from a few minutes to the whole day. A person may feel somewhat good or bad, happy or sad, without knowing why or even being aware of such moods. Sad moods fall far short of clinical depression's constant feelings of helplessness and hopelessness. But moods linger much longer than emotions, which typically flare up and burn out fairly quickly. In contrast to a mood, joy, anger and disgust feel intense and are experienced as having definite causes.

Feelings as information

Like Forgas, psychologist Norbert Schwarz of the University of Michigan in Ann Arbor sees mental value in sadness. "It's shallow and untrue to assume that positive feelings can only have positive consequences and negative feelings can only have negative consequences," he says.

- [10] When Schwarz was a graduate student in the late 1970s, an influential line of research held that happy moods make people more likely to remember positive events and sad moods more often revive memories of negative events. That account of how feelings influence thought seemed incomplete to the aspiring psychologist. On "good" days, he reasoned, everything just felt right without any past triumphs coming to mind. On "bad" days, life felt lousy in the moment, without any tragic memories returning for an encore.

Schwarz launched a series of studies indicating that people use low-intensity moods as a source of information when forming judgments. Good and bad moods are usually experienced as being about whatever problem or situation a person currently faces, he and his colleagues found. Treating moods in this way often works out, as when a supervisor recommends someone for a raise based on feeling good about that person's recent job performance. Feelings can mislead if, say, a boss feels happy because it's a sunny Friday and thus approves a raise for someone who pleads for a salary hike but doesn't deserve it.

By 1990, Schwarz and his colleagues had conducted a few studies suggesting that positive and negative moods spontaneously shape how people think. Sad moods fostered attention to details, they discovered, whereas happy moods promoted playfulness and creativity. More work was needed, though, to confirm those results and explore their implications for making decisions in various situations.

3. **Conducive (adjective):** making a certain situation or outcome likely or possible; favorable, encouraging

Individuals aren't slaves to their moods, Schwarz cautions. A sad person can think outside the box if necessary, say, to solve problems at work. And a happy person can accurately fill out tax forms or complete other detail-heavy tasks.

Evidence from many labs supports Schwarz's view that moods inform people's judgments, often advantageously and outside of awareness, psychologist Rainer Greifeneder of the University of Basel in Switzerland and his colleagues reported in the May 2011 *Personality and Social Psychology Review*.

- [15] Moods provide surprisingly keen insights into one's environment, the team concluded. Provocative support for that idea appeared in the October 2012 *Journal of Consumer Research*. A team led by business professor Michel Tuan Pham of Columbia University in New York City found that volunteers who trusted their feelings did better at predicting events such as how the stock market would perform in the next week and how upcoming movies would fare at the box office than volunteers who mistrusted their feelings.

By embracing their moods, superior forecasters gained unconscious access to a vast amount of learned information that informed their predictions, Pham speculated.

"In natural situations, feelings provide mostly valid information about whether there is a problem or not and how to respond to current tasks," Schwarz says.

Power of sad

Many emotion theorists now agree that negative moods direct attention to tasks at hand and promote analytical thinking, whereas positive moods broaden attention and prompt original thinking. Researchers in a field dubbed "positive psychology" have put a lot of recent focus on exploring how happiness profits mind and body.

Forgas sees no need for a special field of research to study "negative psychology." He would settle for "more awareness that negative feelings are so common and widespread that they must have adaptive functions." Reports of specific ways in which sadness benefits thinking are beginning to accumulate.

- [20] Consider memory. In the January 2009 *Journal of Experimental Social Psychology*, Forgas and his colleagues found that shoppers in a suburban store remembered more details about what they saw in the store when they reported being in bad moods on rainy, cold days than when they felt happy on sunny, warm days.

Sad moods also improve eyewitness memory, apparently by lowering the tendency to incorporate false and misleading details into accounts of what was observed. In a 2005 study in the *Journal of Experimental Social Psychology*, college students witnessed a staged altercation⁴ between a lecturer and a woman who angrily interrupted the talk.

One week later, while in happy or sad moods induced by watching emotional film clips, participants read questions about the incident that included misleading information. Those in sad moods remembered what had happened much more accurately than their happy peers, Forgas and his colleagues reported. Fewer pieces of false information twisted the memories of sad students.

⁴ **Altercation** (*noun*): a disagreement, argument, or fight

Sad moods can also make first impressions of others more reliable, Forgas says. People often judge those that they meet for the first time by assuming that obvious but often irrelevant traits, such as physical attractiveness, reflect intelligence, agreeableness and other as yet unknown traits. Psychologists refer to this much-studied phenomenon as the halo effect.

Negative moods topple the halo effect off its cockeyed perch, Forgas reported in the December 2011 *European Journal of Social Psychology*. After reminiscing about happy, sad or neutral personal experiences, volunteers read a one-page philosophical essay. Forgas attached a photograph of the writer to each copy of the essay, showing either a casually dressed young woman or a middle-aged man wearing a suit and glasses.

- [25] Happy participants rated the essay far more positively when they thought it was written by the academic-looking man. This halo effect largely disappeared among sad participants. Those in a neutral mood preferred the man's essay, but not to the extent that happy volunteers did.

Sad folks took longer to read and rate the essays than happy and neutral participants did. That's probably because feeling sad fostered a more careful appraisal of essays and photos, Forgas suggests. As a result, he proposes, sad volunteers largely rejected the stereotype of philosophers as tweedy, professorial men, helping to minimize the halo effect.

Cheerless cooperators

Sadness also confers some surprising social benefits. "While a positive mood may increase self-focus and selfishness, a negative mood can increase concern for others and the quality of communication," Forgas says.

When asked to divide raffle tickets or other prizes with a partner shown in a photo on a computer screen, sad volunteers handed out nearly even portions while happy volunteers kept the bulk for themselves, Forgas and a colleague reported in the January *Computers in Human Behavior*.

In another computer game, participants were informed that a partner seen only in a photo could accept or reject offers of how to divvy up prizes. No partner actually existed, but players were told that a vetoed⁵ offer would leave them empty-handed.

- [30] Again, sad volunteers shared valuables more evenly than their happy cohorts did. Sad players took longer to reach their decisions, consistent with having thought more carefully about how to make fair offers.

A gloomy mood also increased participants' concern with fairness when the tables were turned and they had to evaluate offers from a player who didn't really exist. Relative to the happy crowd, a substantially greater proportion of sad volunteers rejected unfair divisions of prizes, such as being offered two out of 10 lottery tickets.

In these experiments, moods were induced either by having participants watch happy or sad film clips or by falsely telling volunteers that they had scored extremely well or poorly on a test of spatial abilities.

5. **Veto** (*verb*): to reject or refuse (typically through vote)

Another study by Forgas and his colleagues, published in the August *European Journal of Social Psychology*, indicates that sad moods also prompt people to share information with others particularly effectively.

In one set of trials, volunteers watched clips of ambiguous,⁶ unemotional movie scenes. While in happy, sad or neutral moods, the volunteers then either verbally described the episode while pretending to talk with a friend or wrote a brief description of the scene for a friend.

- [35] In both conditions, raters determined that sad volunteers communicated more information relevant to the movie scenes and less unrelated information than the other two groups did, especially the happy folks. Those in a sad mood were especially good at keeping accounts brief, clear and to the point.

Moods were induced after participants watched movie clips but before they described the scenes, ensuring that the clips didn't sway their manipulated moods.

Sad feelings may influence communication differently in situations where conversation partners don't expect to share all relevant information, such as diplomatic negotiations or sales encounters. Still, Forgas contends, "everyday moods have a subtle but reliable influence on communication strategies."

That's something that mental health workers and medical personnel should keep in mind, he advises. Being somewhat sad may enable better communication with sick or troubled individuals. A jovial⁷ mood could promote creative insights into a patient's condition or needs.

Gloomy payoffs

Fittingly, happiness researchers such as psychologist Sonja Lyubomirsky of the University of California, Riverside take a positive but measured position on evidence that sadness has an upside. "Transient⁸ negative moods are absolutely beneficial when orientation to detail is warranted," Lyubomirsky says.

- [40] Problems occur when sad moods become so frequent that they blend into an extended downer, she holds. "Happy people experience a lot more positive than negative moods, and their negative moods are not chronic."

Chronic happiness creates its own discontents. Yale University psychologist June Gruber has reported that the sustained, one-note joy of people experiencing the manic phase of bipolar disorder leads to all sorts of personal and social misjudgments.

Even brief sad moods such as those studied by Forgas sometimes provoke bad decisions, says Harvard University psychologist Jennifer Lerner. Mild sadness tends to make people more impatient and thus more apt to focus myopically⁹ on taking money now rather than waiting for a bigger financial payoff in the not-too-distant future, Lerner and her colleagues reported in the January *Psychological Science*.

6. **Ambiguous (adjective):** open to more than one interpretation; inexact or unclear

7. **Jovial (adjective):** friendly and cheerful

8. **Transient (adjective):** lasting only for a short time

9. **Myopic (adjective):** lacking imagination, foresight, or insight

In one experiment that involved real payoffs, sad participants typically required \$37 immediately to forgo receiving a mailed check for \$85 in three months, whereas neutral-mood volunteers usually held out for \$56 in hand. Participants who reported feeling mildly disgusted by the topics of film clips and writing assignments needed about as much money as neutral individuals to pass up a delayed, \$85 windfall. So unlike sadness, being briefly disgusted didn't make people more likely to snap up immediate, low-ball payoffs.

Sadder isn't wiser when it comes to making prudent¹⁰ financial decisions, Lerner concludes. A sad person may urgently need a shot of self-esteem, stoking a preference for instant over delayed gratification. If that's the case, then people may make particularly rash and ill-informed financial decisions after job losses, loved ones' deaths and other distressing events.

- [45] From Forgas' perspective, a take-the-money-and-run approach seems reasonable if sadness accurately alerts a person to a dangerous or unstable environment.

But moods may not engage specific mental strategies as proposed by Forgas, says psychologist Jeffrey Huntsinger of Loyola University Chicago. Several recent investigations, described by Huntsinger in the August *Current Directions in Psychological Science*, suggest that positive moods prompt individuals to double down on any current thinking style, while negative moods trigger a shift to an alternative thinking style.

Among neutral-mood volunteers focusing broadly on an experimental task, those induced to be happy thought even more expansively about the task, whereas those prodded into sadness switched to concentrating on details. When already in a detail-oriented frame of mind, volunteers who became happy maintained that perspective, while those who became sad moved to a broad focus.

If these findings hold up, happy and sad moods simply signal whether or not to change one's current thinking style, Huntsinger says, rather than indicating whether to adopt an analytical or playful thinking style. Researchers have yet to test which of these two possibilities best explains mood-related behaviors.

Forgas acknowledges that much remains unknown about precisely how moods influence thought. If moods work as Huntsinger suggests and not as orchestrators of specific thinking styles, Forgas says, it won't get him down.

- [50] Not that there would be anything wrong with that.

"The Bright Side of Sadness" from societyforscience.org, © 2013, Society for Science. Reprinted with permission, all rights reserved. This article is intended only for single-classroom use by teachers. For rights to republish Science News for Students articles in assessments, course packs, or textbooks, visit: <https://www.societyforscience.org/permission-republish>.

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which TWO of the following statements best express the central ideas of the article?
 - A. Humans are more efficient when they are sad because they are not as motivated by positive emotions.
 - B. Sadness can be a beneficial emotion in regards to behavior, memory, judgment, and communication.
 - C. While sadness does have its benefits, chronic happiness is overall a more beneficial and healthy emotional state.
 - D. Psychologists still have much to learn about the complex benefits of different emotions because of the stigma against studying negative ones.
 - E. Both happiness and sadness, as well as other moods, serve a biological purpose as sources of information.
 - F. First impressions, regardless of one's moods, are much less reliable than common wisdom dictates.

2. PART B: Which TWO of the following quotes best support the answer to Part A?
 - A. "For good evolutionary reasons, positive and negative moods subtly recruit thinking styles suited to either benign or troubling situations" (Paragraph 4)
 - B. "That account of how feelings influence thought seemed incomplete to the aspiring psychologist." (Paragraph 10)
 - C. "Many emotion theorists now agree that negative moods direct attention to tasks at hand and promote analytical thinking" (Paragraph 18)
 - D. "People often judge those that they meet for the first time by assuming that obvious but often irrelevant traits" (Paragraph 23)
 - E. "'Happy people experience a lot more positive than negative moods, and their negative moods are not chronic.'" (Paragraph 40)
 - F. "When already in a detail-oriented frame of mind, volunteers who became happy maintained that perspective, while those who became sad moved to a broad focus." (Paragraph 47)

3. PART A: What does the word "champion" mean as used in paragraph 1?
 - A. to represent
 - B. to support
 - C. to triumph
 - D. to contradict

4. PART B: Which of the following phrases from paragraph 1 best supports the answer to Part A?
 - A. "defended the right to pursue happiness"
 - B. "in the Declaration of Independence"
 - C. "But that's so 237 years ago."
 - D. "pretty much all the time"

5. In the section "Feelings as Information," what connection does the author draw between moods and environments?
- A. Moods are relatively reliable indicators for people to assess their environment and respond to situations.
 - B. Moods are biased signals that often mislead people on how to respond to different situations and environments.
 - C. People use their emotions rather than reasoning as the primary source of information on how to respond to different situations.
 - D. People are more likely to act cautiously in unfamiliar environments, regardless of how much they trust their feelings.
6. How does paragraph 19 contribute to the development of ideas in the passage?
-
-
-
-
-
-
-
-
7. Which statement best describes the effect that the phrase "Individuals aren't slaves to their moods" has on the meaning of the text (Paragraph 13)?
- A. It points out that although moods can affect behavior in certain ways, people are not restricted by these influences and can behave in complex ways.
 - B. Though moods affect people emotionally, this statement acknowledges that people can rise above emotions to think logically.
 - C. Though extreme moods can severely affect mental health, this statement emphasizes how emotions are mostly fleeting and have little power over people's wills.
 - D. It stresses how the majority of psychologists are resistant to the idea that emotions alone can determine and dictate human behavior.
8. PART A: How does the author address the "halo effect" in paragraphs 23-26 to support other claims in the passage?
- A. The author explains that negative moods can decrease the halo effect but can make people more likely to judge harshly, supporting the idea that neutral moods are best for first impressions.
 - B. The author explains that only positive people suffer from the halo effect, supporting the idea that happy people have poor judgment and make more reckless decisions than negative people.
 - C. The author explains that negative moods can decrease the halo effect and improve judgment, supporting the idea that moods like sadness can be beneficial.
 - D. The author explains that the halo effect prevents people from making accurate judgments, supporting the idea that first impressions are usually unreliable and inexact.

9. PART B: Which of the following scenarios would support the findings of the study described in paragraphs 23-26?
- A. A baseball player who feels happy due to a recent win would be more likely to do well in the next game.
 - B. A bank teller who is feeling sad would be less likely to cooperate in a bank robbery.
 - C. A police officer in a sad mood would be more likely to arrest than ticket someone who went over the speed limit.
 - D. A teacher in a happy mood would be more likely to give a straight-A student a good grade on a paper without reading it carefully.
10. What purpose does the section titled "Gloomy Payoffs" have in the overall article? How does it support or weaken Forgas' argument?

Questions 1-5:

Jean Piaget (1896-1980) was a Swiss developmental psychologist and philosopher. Originally trained as a botanist, he developed one of the most important theories of cognitive development in the field of developmental psychology. He was born in the French-speaking part of Switzerland. The son of a university professor, Jean was an intellectually precocious child who was interested in the natural world and the subject of biology. Piaget was growing up during a time when Sigmund Freud's theory and practice of psychoanalysis was developing and becoming popular, which also influenced his interests.

After graduating from his university studies, Piaget moved to Paris and taught at a school directed by Alfred Binet, who developed standardized intelligence tests still used today. As he helped to score Binet's tests, Piaget noticed patterns of consistent errors made by younger children but not by older children and adults. He formed a hypothesis that young children thought differently than adults. This was the germ of what would eventually become his theory of progressive, distinct stages of cognitive development that people go through universally as they grow.

Piaget went from France back to Switzerland in 1921, where he directed the Rousseau Institute in Geneva. When he and his wife had three children of their own, he studied their behavior and learning from their births and through their childhoods. He used the techniques of direct observation and the case study, a method of developing an in-depth, multidimensional profile of each individual child. Piaget described children as "little scientists" who learned through exploring, interacting with, and acting upon their environments.

Piaget proposed in his theory that in learning, just as in biology, humans adapt to their environments through processes of assimilation and accommodation. He proposed that babies form mental constructs to represent their world, which he called schemata. An infant assimilates new information by fitting it into an existing schema. When it will not fit, the child accommodates to it by modifying an existing schema or forming a new one. Because of his emphasis on children's roles in actively constructing their own knowledge of reality, Piaget has been called a great pioneer of constructivism, the theory that people build knowledge based on interactions between their thoughts and experiences.

1. According to this passage, Piaget's first scientific discipline was:

- A. Botany.
- B. Developmental psychology.
- C. Philosophy.
- D. Cognitive development.
- E. None of these.

2. Piaget's proposal of human adaptation to the environment was an application of a principle of:

- A. Freudian psychoanalysis.
- B. The biology he studied.
- C. Binet's intelligence test.
- D. Direct child observation.
- E. None of these.

3. What is correct about Piaget's experience with Alfred Binet's intelligence tests, according to the passage?

- A. Piaget helped Alfred Binet by developing the intelligence tests.
- B. Piaget found the tests were inappropriate for younger children.
- C. Piaget felt younger children thought differently than adults did.
- D. Piaget identified error patterns that invalidated the test results.
- E. None of these

4. Piaget's theory involved which of these?

- A. A gradual and continuous progression of cognitive development
- B. Completely different progression from one individual to the next
- C. The premise that younger children make errors but adults do not
- D. Universal progressive stages of development all humans undergo
- E. None of these

5. The theory that humans build knowledge from interactions between their thoughts and experiences is called:

- A. Biology.
- B. Constructivism.
- C. Cognitive development.
- D. Developmental psychology.
- E. None of these.

Questions 6-10:

Jean Piaget's theory states that infants are in a sensorimotor stage of cognitive development, wherein they get information through their senses, engage in motor activities, and receive feedback from the environment about the effects of their motor actions. He formed these ideas by watching his own children, and those of his university professor colleagues, as they learned about their surroundings through trial and error and discovery.

Piaget called his second stage the preoperational stage, from around ages 2-7 years. Children are acquiring motor skills at this time. Their thought is characterized by egocentrism, thinking everything revolves around them with an inability to assume others' viewpoints. Animism—attributing human characteristics and behaviors to inanimate objects—and magical thinking—

the belief that their thoughts or actions cause unrelated external events—are typical. Children are not yet capable of thinking logically or of conservation, the ability to retain mentally such properties as amount, number, or volume despite changes in shape, appearance, or arrangement.

In the following stage of concrete operations which lasts until around age 11, children begin to think logically and perform what Piaget termed mental operations; but they can only do these relative to concrete objects they can see, touch, and manipulate. They can thus learn simple arithmetic and science. They no longer think egocentrically. They can solve conservation problems involving concrete materials, first realizing that quantities of solids or liquids are the same even when their shapes or the shapes of their containers are changed; and that the number of objects remains constant even when they are arranged differently. However, they are not yet capable of thinking abstractly or performing entirely mental operations.

In Piaget's stage of formal operations, which begins just before puberty and continues into adolescence and adulthood, youngsters develop the ability to perform wholly mental operations and to consider logical arguments and philosophical ideas. They understand abstract concepts such as justice, democracy, truth, and beauty, and can consider moral issues. In fact, Piaget also developed a theory of moral development accompanying his theory of cognitive development. This influenced later developmental psychologists like Lawrence Kohlberg, who used it as a basis for his own developmental theory of moral reasoning, which expanded on the foundations that Piaget had provided.

6. According to this passage, _____ are in Piaget's preoperational stage of cognitive development.

- A. Toddlers
- B. Infants
- C. Teens
- D. Adults
- E. Unknown

7. If a child believes that his disobedience caused a thunderstorm, this is most specifically an example of what Piaget termed:

- A. Animism.
- B. Magical thinking.
- C. Egocentrism.
- D. Conservation.
- E. None of these.

8. Which of these is correct about the stage of concrete operations, according to this passage?

- A. Children can think abstractly during this stage.
- B. Children still think egocentrically in this stage.
- C. Children can think logically during this stage.
- D. Children cannot perform mental operations.
- E. None of these is available from the passage.

9. In a classic Piagetian experiment, a researcher pours liquid into a tall, narrow beaker, and transfers it to a short, wide beaker in front of a student, asking the student which beaker holds more liquid. The student says the amount of liquid is the same regardless of which beaker holds it. Of Piaget's stages, which is the earliest one in which this student is likely to be?

- A. Sensorimotor
- B. Preoperational
- C. Concrete operations
- D. Formal operations
- E. This is not available

10. According to the passage, which is true regarding Lawrence Kohlberg's theory?

- A. It is a cognitive theory that opposes Piaget's theory.
- B. It is a theory which is unrelated to Piaget's theory.
- C. It focuses primarily upon cognitive development.
- D. It expands on Piaget's moral development theory.
- E. It cannot be known which is true from the passage.