Evaluate expressions

Write an expression: 8 less than the quotient of x and 3	
Evaluate the expression if x = 12.	
Evaluate the expression if x = 27.	

Fill in the charts below by evaluating the expressions.

x	$3x + 1$
0.2	
1/2	
9	

x	$5x - 7$
5	
6	
9	

x	$x^2 - 3$
2	
5	
9	

x	$4(x + 1)$
0	
¼	
½	

This time, can you name the expression?

x	
3	18
5	30
8	48

x	
25	4
30	5
35	6

Calculate the value of the following if:

**Use Calculator!

m = 4.2,
t = 3.1,
a = 7.5,
d = 2.5

1. $2m$

2. $4a$

3. $m-t$

4. $2a+m$

5. $3t-a$

6. $3m+2d$

7. $4d+2a-m$

8. $3d+4t-2a$

Calculate the value of the following if:

b = 4,
j = 15,
w = 8,
n = 2

9. $\frac{3}{5}j$

10. $\frac{b+w}{n}$

11. $\frac{j}{5}+\frac{1}{4}w$

12. $\frac{6b+5j}{11}$

13. $\frac{1}{2}w-\frac{3b}{6}$

14. $\frac{5j-2n}{4}$

15. $3n+\frac{7b}{2}-\frac{w}{4}+\frac{1}{3}j$

16. $\frac{2n+2j-2w}{8}$

2A Understanding Variables and Expressions

LESSON 2-1

1. What is the value of $5x + 9$ when $x = 3$?

   A 17

   B 24

   C 34

   D 60

2. What is the value of $59 - 7x$ when $x = 8$?

   A 3

   B 17

   C 56

   D 416

3. What is the value of $23 + y$ when $y = 37$?

   A 50

   B 60

   C 74

   D 107

y	$23 + y$
17	40
27	50
37	

4. What is the value of $w \times 3 + 10$ when $w = 6$?

   A 28

   B 34

   C 78

   D 79

w	$w \times 3 + 10$
4	22
5	25
6	

5. What are the missing values in the table?

   A 6; 7

   B 7; 8

   C 40; 48

   D 56; 64

x	$x \div 8$
40	5
48	
56	

6. What are the missing values in the table?

   A 3; 1

   B 12; 16

   C 12; 22

   D 18; 22

c	$12 + c \div 2$
4	14
12	
20	

7. What are the missing values in the table?

   A 8; 18; 28

   B 9; 18; 29

   C 9; 19; 29

   D 10; 20; 30

a	$2 \times a - 1$
5	
10	
15	

8. What are the missing values in the table?

   A 18; 8; 6

   B 18; 9; 6

   C 51; 48; 45

   D 57; 60; 63

b	$54 \div b$
3	
6	
9	

9. ***SHORT RESPONSE*** Find an expression for the table. Explain how you found the expression, and verify that the expression fits each pair of numbers in the table.

t	
7	35
8	40
9	45

10. ***SHORT RESPONSE*** Find an expression for the table. Explain how you found the expression, and verify that the expression fits each pair of numbers in the table.

s	
66	11
54	9
36	6

11. ***SHORT RESPONSE*** Find an expression for the table. Explain how you found the expression, and verify that the expression fits each pair of numbers in the table.

g	
52	26
60	30
68	34

12. ***SHORT RESPONSE*** Find an expression for the table. Explain how you found the expression, and verify that the expression fits each pair of numbers in the table.

m	
2	6
4	12
6	18

LESSON 2-2

13. Which expression represents the phrase "the product of 7 and 12"?

A $7 + 12$ C $7 - 12$

B 7×12 D $7 \div 12$

14. Which algebraic expression represents the phrase "14 more than x"?

A $x + 14$ C $x - 14$

B $14 - x$ D $14 \times x$

15. Which algebraic expression represents the phrase "the quotient of n and 8"?

A $n - 8$ C $8 \div n$

B $n \times 8$ D $\frac{n}{8}$

16. Which expression represents the phrase "the sum of 322 and 18"?

A 322×18 C $322 - 18$

B $322 + 18$ D $\frac{322}{18}$

17. Which of the following is a phrase for $y \div 4$?

A 4 less than y

B y less than 4

C the quotient of y and 4

D the quotient of 4 and y

18. Which of the following is a phrase for $52 - p$?

A p less than 52

B 52 less than p

C the quotient of 52 and p

D the sum of p and 52

19. Which of the following is a phrase for $(23)(6)$?

A the sum of 23 and 6

B 23 divided by 6

C the product of 23 and 6

D the difference of 23 and 6

20. Which of the following is a phrase for $h + 96$?

A the difference of h and 96

B the product of h and 96

C 96 more than h

D 96 minus h

21. ***SHORT RESPONSE*** Jodie's class is dividing into groups of 3 students for a project. Let x represent the total number of students in the class. Write an expression that represents the number of groups in the class. What action in the problem tells you which operation to use?

22. ***SHORT RESPONSE*** Joseph cut 18 inches from a piece of kite string. Let y represent the remaining length of the string. Write an expression that represents the original length of the kite string. What action in the problem tells you which operation to use?

23. ***SHORT RESPONSE*** Let p represent the number of players on a team. Write an expression that represents how many players will be on 65 teams. What action in the problem tells you which operation to use?

24. ***SHORT RESPONSE*** Earth has a diameter of 7,926 miles. Let d represent the diameter of the Moon, which is smaller than the diameter of Earth. Write an expression that represents how much larger the diameter of Earth is than the diameter of the Moon. What action in the problem tells you which operation to use?

25. ***SHORT RESPONSE*** Marion scored 82 more points than Jody in a contest. Let j represent the number of points that Jody scored. Write an expression that represents the number of points Marion scored. What action in the problem tells you which operation to use?