## Writing Algebraic Equations

Name: $\qquad$

1. The lengths of the sides of a pentagon are shown. Express the perimeter in terms of $x$.
A. $10 x+1$
B. $11 x+3$
C. $11 x+1$
D. $11 x-1$

2. The lengths of the sides of a hexagon are shown. Express the perimeter in terms of $y$.
A. $9 y-1$
B. $10 y-1$
C. $10 y-3$
D. $11 y+2$

3. Two sides of a rectangle are shown. What is the perimeter of the rectangle in terms of $a$ ?
A. $6 a-3$
B. $10 a+4$
C. $10 a-4$
D. $14 a$


Date: $\qquad$
4. Thirty cents worth of grass seed will cover 1 square yard of lawn. Which equation shows how much will it cost to seed the yard as shown?

A. $\quad c=0.30(8 \times 12)$
B. $c=0.30(2 \times 8)+0.30(2 \times 12)$
C. $c=(0.30 \times 8)+(0.30 \times 12)$
D. $c=(0.30+8) \times(0.30+12)$
5. Nick wants to put a fence around his yard shown in the diagram. Fencing costs $\$ 20$ per foot. Which equation shows the cost, $c$, of fencing his yard?

A. $c=20 \times(30 \times 22)$
B. $c=20+2(30+22)$
C. $c=20 \times 2 \times(30+22)$
D. $c=(20 \times 22)+(30 \times 2)$
6. The table shows the cost of renting different numbers of videos.

| number <br> of videos <br> $(x)$ | rental cost <br> in dollars <br> $(y)$ |
| :---: | :---: |
| 2 | 4 |
| 3 | 6 |
| 5 | 10 |

Which expression shows the cost in terms of the number of videos?
A. $x+2$
B. $2 x$
C. $y-5$
D. $4 y$
7. A fireman is climbing up his rescue ladder to save a cat from a burning apartment. The table shows his height above the ground when he is on different rungs of the ladder.

| number <br> of rungs <br> $(x)$ | height <br> in meters <br> $(y)$ |
| :---: | :---: |
| 18 | 6 |
| 24 | 8 |
| 30 | 10 |

Which expression shows the height in terms of the number of rungs?
A. $2 y$
B. $y+16$
C. $\frac{1}{3} x$
D. $x-20$
8. Peter is five years older than his best friend Gene. If Peter's age is represented by $\boldsymbol{\oplus}$, then which expression represents Gene's age?
A.
B. +5
C. $\frac{1}{5} \oplus$
D. -5
9. Ernie is four years younger than his best friend Pepe. If Ernie's age is represented by $\diamond$, then which expression represents Pepe's age?
A. $\diamond+4$
B. $\diamond-4$
C. $\frac{1}{4} \diamond$
D. $4 \diamond$
10. Which expression shows the average of the numbers $x, y, z$ and $t$ ?
A. $\frac{4 x+4 y}{z+t}$
B. $x+y+z+t$
C. $\frac{4}{x+y+z+t}$
D. $\frac{x+y+z+t}{4}$
11. Janet needs 6 yards of material for two dresses. If $n$ represents an unknown number of dresses, which of the following shows how much material she will need for $n$ dresses?
A. $(6 \div 2) n$
B. $2 n \div 6$
C. $(6 \times 2) \div n$
D. $6 \times 2 n$
12. Yuan needs 3 cups of heavy cream to make frosting for two cakes. If $n$ represents an unknown number of cakes, which of the following shows how much heavy cream she will need for $n$ cakes?
A. $2 n \div 3$
B. $(3 \div 2) n$
C. $(3 \times 2) \div n$
D. $3 \times 2 n$
13. Roberto earned $\$ 75$ for pressure-washing a house, $\$ 20$ for trimming a hedge, and $\$ 5$ each time he walked the neighbor's dog. If he walked the neighbor's dog w times, which algebraic expression would be used to calculate the total amount of money he earned?
A. $\$ 95+5 w$
B. $\$ 75+25 w$
C. $\$ 75+\$ 20+\$ 5+w$
D. $100 w$
14. John earns $\$ 15$ less than twice Bob's salary. Which expression illustrates the salary that John earns?
A. $15-2 b$
B. $2 b-15$
C. $2(b-15)$
D. $15 b-2$
15. Mao's test score is 6 more than one-third of Yesenia's test score. Which expression illustrates Mao's test score?
A. $\frac{y}{3}+6$
B. $\frac{3}{y}+6$
C. $y+\frac{6}{3}$
D. $y+\frac{3}{6}$
16. Trevor needs to cut an 8 -foot board into two pieces. One piece must be 1 foot longer than the other. Which equation expresses the relationship of the two pieces after the cut if $x$ represents the length of the longer piece?
A. $x+x+1=8$
B. $x+x-1=8$
C. $x+1=8-x$
D. $x-1=8$
17. Anita's first 2 test grades were 82 and 75 . Which equation could be used to find $G$, the grade she needs to earn on the next test in order to have an average grade of 80 ?
A. $82+75+G=80$
B. $82+75+G=240$
C. $82+75-\frac{G}{3}=80$
D. $82+75-G=240$
18. The Palmer Landscaping Company planted 152 shrubs and 56 trees in the bank parking lot. They put an equal number of shrubs in each of the 8 areas. Which number sentence can be used to find the total number of shrubs, $S$, in each area?
A. $152 \div 8=S$
B. $56 \div 7=S$
C. $(152+56) \div 8=S$
D. $(152-56) \div 8=S$
19. Cindy has $\$ 2.25$ in dimes and quarters. She has 2 more quarters than dimes. Which equation would best represents the situation if $D=$ the number of dimes?
A. $225=10(D+2)+25 D$
B. $D+D+2=225$
C. $25 D-10(D+2)=225$
D. $225=10 D+25(D+2)$
20. $c+4 \frac{1}{8}$

Which of these could be described by the expression above?
A. Gus added $c$ cups of water to a pitcher of lemonade, then he removed $4 \frac{1}{8}$ cups water
B. Gus added $c$ cups of water to a pitcher of lemonade, then he added $4 \frac{1}{8}$ cups water
C. Gus removed $4 \frac{1}{8}$ cups of water to a pitcher of lemonade, then he added $c$ cups water
D. Gus removed $4 \frac{1}{8}$ cups of water to a pitcher of lemonade, then he removed $c$ cups water
21. $f+2 \frac{5}{8}$

Which of these could be described by the expression above?
A. Glenda had $f$ yards of fabric, then she bought $2 \frac{5}{8}$ yards more fabric
B. Glenda had $f$ yards of fabric, then used $2 \frac{5}{8}$ yards fabric for a tablecloth
C. Glenda used $2 \frac{5}{8}$ yards of fabric, then she bought $f$ yards more fabric
D. Glenda used $2 \frac{5}{8}$ yards of fabric, then she used $f$ yards fabric for a tablecloth
22. $p-1 \frac{1}{8}$

Which of these could be described by the expression above?
A. Dennis packed a suitcase that weighed $p$ pounds, then he added $1 \frac{1}{8}$ pounds to it
B. Dennis packed a suitcase that weighed $p$ pounds, then he removed $1 \frac{1}{8}$ pounds
C. Dennis packed a suitcase that weighed $1 \frac{1}{8}$ pounds, then he added $p$ more pounds
D. Dennis packed a suitcase that weighed $1 \frac{1}{8}$ pounds, then he removed $p$ pounds
23. $w-4 \frac{1}{2}$

Which of these could be described by the expression above?
A. Denise's dog weighed $4 \frac{1}{2}$ pounds, then lost $w$ pounds
B. Denise's dog weighed $4 \frac{1}{2}$ pounds, then gained $w$ pounds
C. Denise's dog weighed $w$ pounds, then gained $4 \frac{1}{2}$ pounds
D. Denise's dog weighed $w$ pounds, then lost $4 \frac{1}{2}$ pounds
24. You could use the equation $127-m=94$ to solve the following problem:

Brad has 127 marbles. He gave some to his sister and he has 94 left. How many marbles did Brad give to his sister?

What does the " $m$ " in the equation represent?
A. the number of marbles Brad received from his sister
B. the number of marbles Brad has now
C. the number of marbles Brad's sister received
D. the number of marbles Brad had at the beginning
25. You could use the equation $26+b=42$ to solve the following problem:

Cindy had 26 buttons. Her grandmother gave her some more buttons and now Cindy has 42 buttons. How many buttons did Cindy's grandmother give her?

What does the " $b$ " in the equation represent?
A. the number of buttons Cindy's grandmother has
B. the number of buttons Cindy's grandmother gave her
C. the number of buttons Cindy had in the beginning
D. the number of buttons Cindy gave to her grandmother
26. You could use the equation $14+s=21$ to solve the following problem:

Ralph had 14 shells. His cousin gave him some more shells and now Ralph has 21 shells. How many shells did Ralph's cousin give him?

What does the " $s$ " in the equation represent?
A. the number of shells Ralph's cousin gave him
B. the number of shells Ralph gave to his cousin
C. the number of shells Ralph had in the beginning
D. the number of shells Ralph's cousin has
27. Write as an algebraic equation and solve:

Four less than a number, $r$, is 10 .
29. Write as an algebraic equation and solve:

Eight is the quotient of a number and 4.

Problem-Attic format version 4.4.314
(c) 2011-2017 EducAide Software

Licensed for use by amy.wallace@warren.kyschools.us Terms of Use at www.problem-attic.com

Writing Algebraic Equations $3 / 16 / 2018$
1.

Answer: C
Objective: 6.EE. 6
2.

Answer: B
Objective: 6.EE. 6
3.

Answer: C
Objective: 6.EE. 6
4.

Answer: A
Objective: 6.EE. 6
5.

Answer: C
Objective: 6.EE. 6
6.

Answer: B
Objective: 6.EE. 6
7.

Answer: C
Objective: 6.EE. 6
8.

Answer: D
Objective: 6.EE. 6
9.

Answer: A
Objective: 6.EE. 6
10.

Answer: D
Objective: 6.EE. 6
11.

Answer: A
Objective: 6.EE. 6
12.

Answer: B
Objective: 6.EE. 6
13.

Answer: A
Objective: 6.EE. 6
14.

Answer: B
Objective: 6.EE. 6

15
Answer: A
Objective: 6.EE. 6
16.

Answer: B
Objective: 6.EE. 6
17.

Answer: B
Objective: 6.EE. 6
18.

Answer: A
Objective: 6.EE. 6
19.

Answer: D
Objective: 6.EE. 6
20.

Answer: B
Objective: 6.EE. 6
21.

Answer: A
Objective: 6.EE. 6
22.

Answer: B
Objective: 6.EE. 6
23.

Answer: D
Objective: 6.EE. 6
24.

Answer: C
Objective: 6.EE. 6
25.

Answer: B
Objective: 6.EE. 6
26.

Answer: A
Objective: 6.EE. 6
27.

Answer: $\quad r-4=10 ; 14$
Objective: 6.EE. 6
28.

Answer: $\quad 6(n+8)=60 ; 2$
Objective: 6.EE. 6
29.

Answer: $\quad \frac{x}{4}=8 ; 32$
Objective: 6.EE. 6

