Name:

## Unit 3 Study Guide Expressions

Evaluate each expression using the given variable replacements.

| 1. $7 x-4$ | (if $x=9)$ | 2. $\left(p+q^{2}\right)+p q$ | (if $p=7$ and $q=5)$ |
| :--- | ---: | :--- | :--- |
| 3. $\frac{a b}{a-b}$ | (if $a=12$ and $b=4)$ | 4. $\frac{3}{4}(c+d)$ | (if $c=\frac{1}{4}$ and $\left.d=\frac{3}{20}\right)$ |

Translate each expression.
5. "the quotient of 50 and a number $w$ "
6. "nine more than twice a number $r$ "
7. "fourteen fewer than a number $k$ "
8. "the product of four and a number $a$ "
9. "the difference between three times $x$ and $y$ "
10. "the sum of one-third $c$ and ten"
11. Jill is running a marathon, which is 26.2 miles. So far, she has completed $m$ miles.
a) Write an expression for the number of miles she has left.
b) If she has completed 8.9 miles so far, how many miles does she have left?
a)
b)
12. An airplane can hold at most $p$ passengers on a flight. A certain flight has seven passengers less than four-fifths of its maximum capacity on board
a) Write an expression for the number of passengers on the flight.
b) If the plane can seat 440 passengers at most, how many passengers are on the flight?
a)
b)
13. Which best describes the circled part of the following expression?

$$
\text { (14) } x+5
$$

A. term
B. variable
C. constant
D. coefficient
14. Which list includes like terms in the expression below?

$$
7 x+4+4 x+7 y+7
$$

A. $7 x, 4 x$
B. $7 x, 7 y$
C. $4 x, 4$
D. $7 x, 4 x, 7 y$

Simplify each expression by combining like terms.
15. $2 a+16+5 a$
16. $24+8 w-5 w-11+w$

Simplify each expression using the distributive property.

| 17. $6(17-4)$ | 18. $7(m+6)$ | $19.5(8 k-18)$ |
| :--- | :--- | :--- |

Simplify each expression completely.

| 20. $6(r+4)+5 r$ | $21.17 p+2(5-3 p)$ | 22. $2(8 a+b)+3(b-a)$ |
| :--- | :--- | :--- |

Simplify each expression using a GCF.
23. $72+40$
24. $14 n+14$
25. $48 r-18 s$
26. Noah, Mia, and Jay went fishing. Mia caught one more fish than Noah. Jay caught three times as many fish as Mia. If $f$ represents the number of fish that Noah caught, which expression represents the total number of fish they caught?
27. Felix bought a baseball card twenty years ago that is now worth $\$ 40$ less than six times the original amount he paid. If $x$ represents the original amount he paid, write an expression for the current value of the card in simplest form.
A. $3 f+5$
B. $4 f+3$
C. $5 f+4$
D. $4 f+4$

Use the following expression for 28-30: $32+\frac{2}{3}(21 y-6)$
28. Write the expression in simplest form.
29. Write the expression in GCF form.
30. Write any other equivalent expression.

