

MULTIPLE CHOICE

1. Write an algebraic expression for the statement that follows.

The distance (in miles) traveled in t hours if the average speed is 40 miles per hour.

- a. $40 - t$
- b. $40 + t$
- c. $\frac{40}{t}$
- d. $40t$
- e. $40t^2$

ANS: D PTS: 1 DIF: Easy
OBJ: Write an algebraic expression for a statement
NOT: Section 2.1

REF: 2.1.1
MSC: Concept

2. Write an algebraic expression for the statement.

The income earned at \$10.91 per hour for w hours.

- a. $10.91 - w$
- b. $\frac{10.91}{w}$
- c. $\frac{w}{10.91}$
- d. $10.91w$
- e. $10.91 + w$

ANS: D PTS: 1 DIF: Easy
OBJ: Write an algebraic expression for a statement
NOT: Section 2.1

REF: 2.1.2
MSC: Concept

3. Write an algebraic expression for the statement.

The total weight of x bags of fertilizer if each bag weighs 32 pounds

- a. $32 + x$
- b. $\frac{32}{x}$
- c. $\frac{x}{32}$
- d. $32x$
- e. $32 - x$

ANS: D PTS: 1 DIF: Easy
OBJ: Write an algebraic expression for a statement
NOT: Section 2.1

REF: 2.1.4
MSC: Concept

4. Identify the variable(s) and the constant(s) in the expression that follows.

$$w + 2$$

- a. variable: w
constant: 2
- b. variables: w and 2
constant: none
- c. variable: 2
constant: w
- d. variables: $w + 2$
constant: none
- e. variable: none
constants: w and 2

ANS: A PTS: 1 DIF: Easy REF: 2.1.5
OBJ: Identify the variable in an algebraic expression MSC: Concept
NOT: Section 2.1

5. Identify the variable(s) and the constant(s) in the expression that follows.

$$y + 5^3$$

- a. variable: y
constant: 5^3
- b. variables: y and 5^3
constant: none
- c. variable: none
constants: y and 5^3
- d. variable: 5^3
constant: y
- e. variables: $y + 5$
constant: none

ANS: A PTS: 1 DIF: Easy REF: 2.1.9
OBJ: Identify the variable in an algebraic expression MSC: Concept
NOT: Section 2.1

6. Identify the terms of the expression that follows.

$$9x^2 + 2$$

- a. 2, 9
- b. 2, $9x^2$
- c. $9x^2 + 2$
- d. 2, 9, x^2

e. x^2

ANS: B

PTS: 1

DIF: Easy

REF: 2.1.12

OBJ: Identify the terms of an algebraic expression

MSC: Concept

NOT: Section 2.1

7. Identify the terms of the expression that follows.

$$y^2 + 2yx + x^2$$

a. $y^2 + 2yx + x^2$

b. y^2, yx, x^2

c. $y^2, 2yx, x^2$

d. 2

e. y, x

ANS: C

PTS: 1

DIF: Medium

REF: 2.1.18

OBJ: Identify the terms of an algebraic expression

MSC: Concept

NOT: Section 2.1

8. Identify the terms of the expression that follows.

$$\frac{5}{s-5} - 9s^2 + 22$$

a. $\frac{5}{s-5}, 9s^2, 22$

b. $\frac{5}{s-5}, -9s^2, 22$

c. $\frac{5}{s-5}, 9s^2$

d. 5, 9, 22

e. s, s^2

ANS: B

PTS: 1

DIF: Medium

REF: 2.1.24

OBJ: Identify the terms of an algebraic expression

MSC: Concept

NOT: Section 2.1

9. Identify the coefficient of the term $-\frac{1}{10}y$.

a. $-\frac{1}{10}$

b. 10

c. $-y$

d. y

e. $\frac{1}{10}$

ANS: A

PTS: 1

DIF: Easy

REF: 2.1.27

OBJ: Identify the coefficient of a term MSC: Concept NOT: Section 2.1

10. Identify the coefficient of the term $5\pi w^2$.

- a. w^2
- b. $5\pi w$
- c. 5π
- d. w
- e. 5

ANS: C PTS: 1 DIF: Medium REF: 2.1.31
OBJ: Identify the coefficient of a term MSC: Concept NOT: Section 2.1

11. Identify the coefficient of the term $-2.16x$.

- a. x
- b. 2.16
- c. -2.16
- d. -0.16
- e. $-2.16x$

ANS: C PTS: 1 DIF: Easy REF: 2.1.34
OBJ: Identify the coefficient of a term MSC: Concept NOT: Section 2.1

12. Eliminate all exponents by expanding 6^3y^4 as a product.

- a. $(6y)^7$
- b. $6 \cdot 6 \cdot 6 \cdot y \cdot y \cdot y \cdot y$
- c. $18 \cdot y \cdot y \cdot y \cdot y$
- d. $(6y)^{12}$
- e. $216y^4$

ANS: B PTS: 1 DIF: Easy REF: 2.1.37
OBJ: Expand an exponential expression MSC: Skill NOT: Section 2.1

13. Eliminate all exponents by expanding $(s^2)^5$ as a product.

- a. s^7
- b. s^{10}
- c. $s^2 \cdot s^2 \cdot s^2 \cdot s^2 \cdot s^2$
- d. $s \cdot s \cdot s \cdot s \cdot s \cdot s \cdot s$
- e. $s \cdot s \cdot s \cdot s \cdot s \cdot s \cdot s \cdot s \cdot s \cdot s$

ANS: E PTS: 1 DIF: Medium REF: 2.1.41
OBJ: Expand an exponential expression MSC: Skill NOT: Section 2.1

14. Eliminate all exponents by expanding $(x-y)^5$ as a product.

- a. $(x-y)(x-y)(x-y)(x-y)(x-y)$
- b. $x^5 - y^5$

- c. $x - y^y y^y y^y y^y$
- d. $(x - y) - (x - y) - (x - y) - (x - y) - (x - y)$
- e. $5x - 5y$

ANS: A PTS: 1 DIF: Medium REF: 2.1.48
 OBJ: Expand an exponential expression MSC: Skill NOT: Section 2.1

15. Eliminate all exponents by expanding $\left(\frac{x}{2y}\right)^2$ as a product.

- a. $\frac{1}{4} \cdot \frac{x}{y}$
- b. $\frac{1}{2} \cdot \frac{2x}{y}$
- c. $\frac{x}{2y} \cdot \frac{x}{2y}$
- d. $\frac{1}{4} \cdot \frac{x^2}{y^2}$
- e. $\frac{1}{2^2} \cdot \frac{x^2}{y^2}$

ANS: C PTS: 1 DIF: Medium REF: 2.1.49
 OBJ: Expand an exponential expression MSC: Skill NOT: Section 2.1

16. Eliminate all exponents by expanding $\left[6(a - b)^2\right]\left[6(a - b)^3\right]$ as a product.

- a. $(12)(a - b)(a - b)(a - b)(a - b)(a - b)$
- b. $(6)(6)(a - b)(a - b)(a - b)(a - b)(a - b)$
- c. $(6)(a - b)(a - b)(a - b)(a - b)(a - b)$
- d. $36(a^5 - b^5)$
- e. $36(a - b)^5$

ANS: B PTS: 1 DIF: Difficult REF: 2.1.51
 OBJ: Expand an exponential expression MSC: Skill NOT: Section 2.1

17. Rewrite the product below in exponential form.

$$(8w)(8w)$$

- a. $8^2 w^2$
- b. $8^2 w$
- c. $16w$
- d. $8w^2$
- e. $16w^2$

ANS: A PTS: 1 DIF: Easy REF: 2.1.55
 OBJ: Write a product in exponential form MSC: Skill

NOT: Section 2.1

18. Rewrite the product below in exponential form.

$$a \cdot a \cdot a \cdot b \cdot b \cdot b \cdot b$$

- a. a^3b^4
- b. $3a4b$
- c. a^7
- d. 8^7b^7
- e. $7ab$

ANS: A PTS: 1 DIF: Medium REF: 2.1.58
OBJ: Write a product in exponential form MSC: Skill
NOT: Section 2.1

19. Rewrite the product below in exponential form.

$$9 \cdot (u - v) \cdot 9 \cdot 9 \cdot (u - v) \cdot 9 \cdot (u - v) \cdot 9 \cdot (u - v) \cdot 9 \cdot (u - v)$$

- a. $a(u - v)^{30}$
- b. $a(u - v)^{11}$
- c. $a^{11}(u - v)^{11}$
- d. $54(u - v)^5$
- e. $9^6(u - v)^5$

ANS: E PTS: 1 DIF: Medium REF: 2.1.60
OBJ: Write a product in exponential form MSC: Skill
NOT: Section 2.1

20. Evaluate the algebraic expression $6x - 2$ when $x = \frac{5}{6}$.

- a. 3
- b. 28
- c. -7
- d. $\frac{14}{3}$
- e. $\frac{29}{6}$

ANS: A PTS: 1 DIF: Easy REF: 2.1.64
OBJ: Evaluate an algebraic expression for specified values of the variables
MSC: Skill NOT: Section 2.1

21. Evaluate the algebraic expression $x - 9(x - y)$ when $x = 3$ and $y = 3$.

- a. 3
- b. -51
- c. -27

- d. -21
- e. 0

ANS: A PTS: 1 DIF: Medium REF: 2.1.71
OBJ: Evaluate an algebraic expression for specified values of the variables
MSC: Skill NOT: Section 2.1

22. Evaluate the algebraic expression $\frac{x-5y}{x+7y}$ when $x = -10$ and $y = -7$.

- a. $-\frac{25}{59}$
- b. $\frac{45}{59}$
- c. $\frac{25}{39}$
- d. $-\frac{15}{13}$
- e. $-\frac{43}{77}$

ANS: A PTS: 1 DIF: Medium REF: 2.1.75
OBJ: Evaluate an algebraic expression for specified values of the variables
MSC: Skill NOT: Section 2.1

23. Evaluate the algebraic expression $\frac{9x-y}{y^2+8}$ when $x = 10$ and $y = 6$.

- a. $\frac{9}{11}$
- b. $\frac{89}{14}$
- c. $\frac{11}{27}$
- d. $\frac{21}{11}$
- e. $\frac{45}{7}$

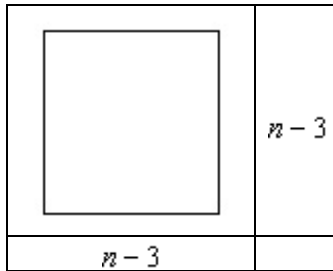
ANS: D PTS: 1 DIF: Medium REF: 2.1.78
OBJ: Evaluate an algebraic expression for specified values of the variables
MSC: Skill NOT: Section 2.1

24. Evaluate the algebraic expression Prt when $P = 500$, $r = 0.02$, and $t = 3$.

- a. 3
- b. 3000
- c. 30000
- d. 30
- e. 300

ANS: D PTS: 1 DIF: Medium REF: 2.1.84
 OBJ: Evaluate an algebraic expression for specified values of the variables
 MSC: Skill NOT: Section 2.1

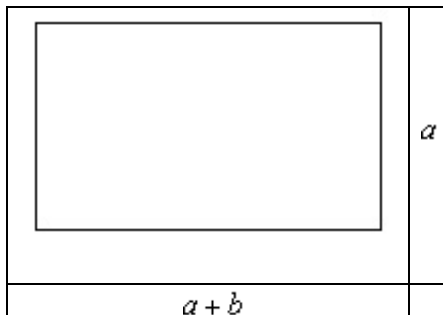
25. Find an expression for the area of the square below then evaluate the expression when $n = 10$.



- a. Area = $(n-3)^2 = 49$
- b. Area = $n^2 = 100$
- c. Area = $(n-3) + (n-3) = 14$
- d. Area = $4(n-3) = 28$
- e. Area = $2(n-3)^2 = 98$

ANS: A PTS: 1 DIF: Medium REF: 2.1.89
 OBJ: Write an algebraic expression in geometric applications MSC: Application
 NOT: Section 2.1

26. Find an expression for the area of the rectangle below then evaluate the expression when $a = 5$ and $b = 12$.



- a. Area = $ab = 60$
- b. Area = $a(a+b) = 85$
- c. Area = $a^2 + b = 37$
- d. Area = $2a + 2(a+b) = 44$
- e. Area = $a + (a+b) = 22$

ANS: B PTS: 1 DIF: Medium REF: 2.1.91
 OBJ: Write an algebraic expression in geometric applications MSC: Application
 NOT: Section 2.1