Lar_EIA_6e_ch02sec01

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. $\dfrac{40}{t}$
   d. $40t$
   e. 40^t

   ANS: D PTS: 1 DIF: Easy REF: 2.1.1
   OBJ: Write an algebraic expression for a statement MSC: Concept
   NOT: Section 2.1

2. Write an algebraic expression for the statement.

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

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

   ANS: D PTS: 1 DIF: Easy REF: 2.1.2
   OBJ: Write an algebraic expression for a statement MSC: Concept
   NOT: Section 2.1

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. $\dfrac{32}{x}$
   c. $\dfrac{x}{32}$
   d. $32x$
   e. $32 - x$

   ANS: D PTS: 1 DIF: Easy REF: 2.1.4
   OBJ: Write an algebraic expression for a statement MSC: Concept
   NOT: Section 2.1

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. $(x-y)\cdot(x-y)\cdot(x-y)\cdot(x-y)\cdot(x-y)$
b. x^5-y^5

c. $x - y \cdot y \cdot y \cdot y \cdot y$
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. $36\left(a^5 - b^5\right)$
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.

$(8w) \cdot (8w)$

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. $a^3 b^4$
b. $3a4b$
c. a^7
d. $8^7 b^7$
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 $x - 9\left(x - y\right)$ 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. $\frac{45}{7}$

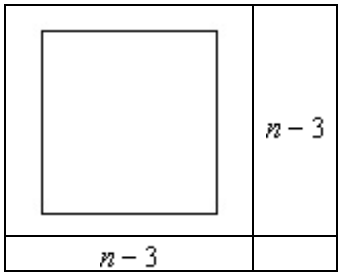
ANS: D PTS: 1 DIF: Medium REF: 2.1.78
OBJ: Evaluate an algebraic expression for specified values of the variables
MSC: Skill NOT: Section 2.1

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

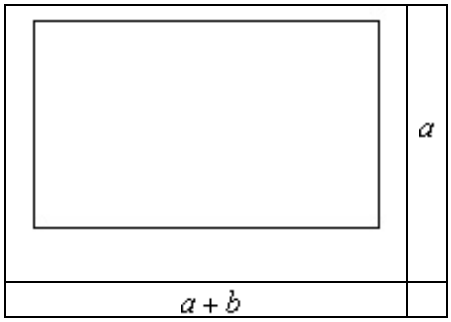
25. Find an expression for the area of the square below then evaluate the expression when $n = 10$.



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