Chapter 3 TECM 119 Practice Test

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Identify the individual factors, without exponents, of the algebraic expression.

1) $3a^2c$ 1) _____

A) a, c B) 3, a, c C) 3 D) 3, a, a, c

Use the literal symbols listed at the end of the problem to translate the given statement into an algebraic formula.

2) A first number x equals five times a second number y. (x, y) 2) _____

A) xy = 5 B) x = 5y C) y = 5x D) x = y + 5

Solve the problem.

3) How many feet of fence should be purchased to enclose a circular dog pen with a radius of 4 feet? Use $\pi \approx 3.14$. 3) _____

A) 6.28 ft B) 12.56 ft C) 50.24 ft D) 25.12 ft

4) A technician measures the current in a circuit to be 6.6 amperes and the resistance is 7 ohms. Find the voltage. 4) _____

A) 46.2 V B) 13.6 V C) 1.061 V D) 0.943 V

List the terms of the expression.

5) $8y + d + \frac{3p}{s}$ 5) _____

A) y, d, p B) 8, 3 C) $y, d, \frac{p}{s}$ D) $8y, d, \frac{3p}{s}$

Identify the group of terms as like or unlike.

6) 11z, -4z 6) _____

A) Unlike B) Like

7) $12v^4, -8v^3$ 7) _____

A) Like B) Unlike

Indicate the multiplication of the factors. Do not multiply.

8) 4, d, d - x 8) _____

A) 4(d - x) B) 4dx C) 4 + d + d - x D) 4d(d - x)

Express the indicated division as a fraction.

9) 8 ÷ 13a 9) _____

A) $\frac{8}{13a}$ B) $\frac{104}{a}$ C) $\frac{13a}{8}$ D) $\frac{8a}{13}$

Evaluate the formula for the given values of the variables.

10) P = 2L + 2W; L = 6 in., W = 9 in. 10) _____

A) P = 108 in. B) P = 216 in. C) P = 30 in. D) P = 15 in.

Simplify the expression.

11) $-9y - 6x - 3x$ 11) _____

A) $-9y - 9x$ B) $-9y + 3x$ C) $-18xy$ D) $-9y - 3x$

12) $4x^2 - 3xy + 6y^2 - 8x^2 - xy$ 12) _____

A) $4x^2 - 4xy + 6y^2$ B) $-4x^2 - 2xy + 6y^2$

C) $2x^2 - 4xy$ D) $-4x^2 - 4xy + 6y^2$

Perform the operations, removing parentheses, and collecting like terms.

13) $9x - (4 - 2x)$ 13) _____

A) $7x - 4$ B) $9x - 6$ C) $11x - 4$ D) $11x + 4$

14) $(r + 3s + 2) + (4r + s) + (s + 5)$ 14) _____

A) $5r + 4s + 7$ B) $4r + 3s + 7$ C) $3r + 5s + 7$ D) $5r + 5s + 7$

Simplify the expression.

15) $x - [9x - (x - 8)]$ 15) _____

A) $-8x + 8$ B) $-7x - 8$ C) $-7x + 8$ D) $-9x - 8$

16) $b - \{8b - [b - (4b - 6) - 4]\}$ 16) _____

A) $-10b + 2$ B) $-12b - 2$ C) $-2b + 10$ D) $-10b + 10$

Perform the indicated operation.

17) The shape of a curve in a machined part results in the expression $10R - (5R - r)$. Simplify the expression. 17) _____

A) $5R - r$ B) $10R$ C) $r - 5R$ D) $5R + r$

Perform the indicated multiplication.

18) $6(-12x - 10)$ 18) _____

A) $-12x - 60$ B) $-132x$ C) $-72x - 60$ D) $-72x - 10$

19) $(4x + 7)(x + 2)$ 19) _____

A) $4x^2 - 1x + 14$ B) $x^2 + 14x + 15$ C) $4x^2 + 15x + 14$ D) $x^2 + 15x - 1$

20) $(8x + 3y)^2$ 20) _____

A) $64x^2 + 48xy + 9y^2$ B) $64x^2 + 9y^2$

C) $8x^2 + 9y^2$ D) $8x^2 + 48xy + 9y^2$

21) $(5y - 8)(25y^2 + 40y + 64)$ 21) _____

A) $125y^3 + 512$ B) $25y^3 + 512$

C) $125y^3 - 512$ D) $125y^3 + 320y^2 - 512$

Decide whether the two expressions are equal.

22) n^8n^2 _____ n^{10} 22) _____

A) $\neq$ B) $=$

Perform the indicated division.

23) $\frac{10x^6 + 15x^4}{5x^2}$ 23) _____

A) $2x^4 + 3x^2$ B) $5x^8$ C) $2x^4 + 15x^4$ D) $10x^6 + 3x^2$

24) $\frac{x^2 + 7x + 12}{x + 3}$ 24) _____

A) $x^3 - 9$ B) $x - 9$ C) $x^2 + 4$ D) $x + 4$

25) $\frac{z^3 - 125}{z - 5}$ 25) _____

A) $z^2 + 5z + 25$ B) $z^2 + 10z + 25$ C) $z^2 - 5z + 25$ D) $z^2 + 5z - 25$

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Answer Key

1) D
2) B
3) D
4) A
5) D
6) B
7) B
8) D
9) A
10) C
11) A
12) D
13) C
14) D
15) B
16) A
17) D
18) C
19) C
20) A
21) C
22) B
23) A
24) D
25) A