

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

- 1) $1.2m - 8.3 - 6.6m = -2.7 - 5.4m - 5.6$ 1) _____
 A) 0 B) 1.2
 C) all real numbers D) no solution

Write the following as an equation, using x for the unknown number. Then solve.

- 2) Four times a number added to 9 times the number equals 39. Find the number. 2) _____
 A) $4x(9 + x) = 39$; 4.3 B) $4x - 9x = 39$; -4.3
 C) $4(x + 9) = 39x$; 1 D) $4x + 9x = 39$; 3

Solve the problem.

- 3) The president of a certain university makes three times as much money as one of the department heads. If the total of their salaries is \$180,000, find each worker's salary. 3) _____
 A) president's salary = \$13,500; department head's salary = \$4500
 B) president's salary = \$45,000; department head's salary = \$135,000
 C) president's salary = \$135,000; department head's salary = \$45,000
 D) president's salary = \$90,000; department head's salary = \$45,000

Solve.

- 4) Sally is making a cover for a round table. When finished, the cover will fit exactly with no excess hanging off. Sally has to cut the fabric circle with a 4 inch larger diameter than the table to allow for hemming. If the table has a diameter of 72 inches, how much fabric does Sally need? (Use 3.14 for π . Round to 2 decimal places.) 4) _____
 A) 18,136.64 in.² B) 5024 in.² C) 4534.16 in.² D) 17,194.64 in.²
- 5) How much pure acid should be mixed with 3 gallons of a 50% acid solution in order to get an 80% acid solution? 5) _____
 A) 12 gal B) 1.5 gal C) 7.5 gal D) 4.5 gal

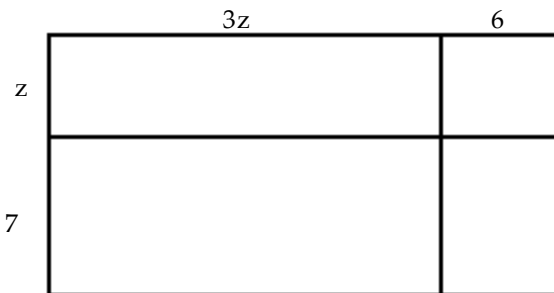
Find the product.

- 6) $(x + 5)(x - 1)$ 6) _____
 A) $x^2 + 3x - 5$ B) $x^2 + 4x - 5$ C) $x^2 - 5x + 4$ D) $x^2 + 4x + 3$
- 7) $(4x - 7)^2$ 7) _____
 A) $4x^2 + 49$ B) $16x^2 + 49$ C) $4x^2 - 56x + 49$ D) $16x^2 - 56x + 49$

Solve the problem.

- 8) The area of the rectangle below is $(z + 7)(3z + 6)$. Find another expression for this area by finding the sum of the areas of the smaller rectangles.

8) _____



- A) $3z^2 + 27z + 42$ B) $3z^2 + 6z + 42$ C) $3z^2 + 21z + 42$ D) $3z^2 + 27z$

Factor the trinomial completely. If the polynomial cannot be factored, write "prime."

9) $x^2 + 7x + 10$

- A) $(x - 2)(x + 1)$ B) $(x - 2)(x + 5)$ C) $(x + 2)(x + 5)$ D) prime

9) _____

10) $x^3 + 9x^2 + 8x$

- A) $x(x^2 + 9x + 8)$ B) $x(x + 1)(x + 8)$ C) $x(x - 1)(x + 8)$ D) $x(x + 1)(x - 8)$

10) _____

Solve the equation.

11) $(x - 6)(x + 9) = 0$

- A) 6, -6, 9, -9 B) 6, -9 C) -6, 9 D) 6, 9

11) _____

Represent the given condition using a single variable, x.

- 12) The length and width of a rectangle whose width is nine times its length.

- A) length = x; width = x + 9 B) width = x; length = x + 9
C) length = x; width = 9x D) width = x; length = 9x

12) _____

Find the product and simplify.

13) $\frac{z^3}{20z} \cdot \frac{4}{3z^2}$

- A) $\frac{1}{15}$ B) $\frac{z}{15}$ C) $\frac{z^3}{15z^2}$ D) $\frac{1}{15z}$

13) _____

14) $\frac{x^2 + 8x + 12}{x^2 + 10x + 24} \cdot \frac{x^2 + 6x + 8}{x^2 + 4x + 4}$

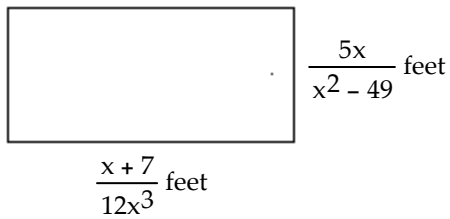
- A) $\frac{x + 2}{x + 4}$ B) $\frac{x + 4}{x + 2}$ C) $\frac{1}{x + 2}$ D) 1

14) _____

Solve the problem.

15) Find the area of the rectangle.

15) _____



A) $\frac{7}{12x^3 - 84}$ sq. ft

B) $\frac{5x^2}{12(x-7)}$ sq. ft

C) $\frac{5}{12x^2(x-7)}$ sq. ft

D) $\frac{5}{12x^2(x+7)}$ sq. ft

Perform the indicated operation. Simplify if possible.

16) $\frac{x+2}{15} + \frac{2}{15}$

16) _____

A) $\frac{4x}{30}$

B) $\frac{x+4}{30}$

C) $\frac{4x}{15}$

D) $\frac{x+4}{15}$

17) $\frac{6y^2}{y-1} + \frac{-6y}{y-1}$

17) _____

A) 0

B) 6y

C) $\frac{6y}{y-1}$

D) $\frac{6y(y+1)}{y-1}$

Answer Key

Testname: SAMPLE EXAM

- 1) C
Objective: (2.3) Recognize Identities and Equations with No Solution
- 2) D
Objective: (2.4) Solve Problems Involving Direct Translations
- 3) C
Objective: (2.4) Solve Problems Involving Relationships Among Unknown Quantities
- 4) C
Objective: (2.5) Use Formulas to Solve Problems
- 5) D
Objective: (2.6) Solve Mixture Problems
- 6) B
Objective: (3.5) Multiply Two Polynomials
- 7) D
Objective: (3.5) Multiply Two Polynomials
- 8) A
Objective: (3.5) Multiply Two Polynomials
- 9) C
Objective: (4.2) Factor Trinomials of the Form $x^2 + bx + c$
- 10) B
Objective: (4.2) Factor Out the Greatest Common Factor and Then Factor a Trinomial of the Form $x^2 + bx + c$
- 11) B
Objective: (4.6) Solve Quadratic Equations by Factoring
- 12) C
Objective: (4.7) Solve Problems That Can Be Modeled by Quadratic Equations
- 13) A
Objective: (5.2) Multiply Rational Expressions
- 14) D
Objective: (5.2) Multiply Rational Expressions
- 15) C
Objective: (5.2) Multiply Rational Expressions
- 16) D
Objective: (5.3) Add and Subtract Rational Expressions with Common Denominators
- 17) B
Objective: (5.3) Add and Subtract Rational Expressions with Common Denominators