

Keystone Practice #4

Operations with Polynomials

Name: _____

1. Which expression is equivalent to x^6x^2 ?
- A. x^4x^3 B. x^5x^3 C. x^7x^3 D. x^9x^3

2. Look at the expression.

$$-2a[-2a(-2a + 4b) + 3b(-a - 6)]$$

Which of the following correctly simplifies the expression?

- A. $-2a[4a^2 - 8ab - 3ab - 18b]$
 $-2a[4a^2 - 5ab - 18b]$
 $-8a^3 + 10a^2b + 36b$
- B. $-2a[4a^2 - 8ab - 3ab - 18b]$
 $-2a[4a^2 - 5ab - 18b]$
 $-8a^2 + 10ab + 36ab$
- C. $-2a[4a^2 - 8ab - 3ab - 18b]$
 $-2a[4a^2 - 11ab - 18b]$
 $-8a^3 + 22a^2b + 36ab$
- D. $-2a[4a^2 + 8ab + 3ab + 18b]$
 $-2a[4a^2 + 11ab + 18b]$
 $-8a^3 - 22a^2b - 36ab$

3. The cost of materials needed to make a sail is represented by the equation below where C is the cost and b is the length of the base of the sail.

$$C = \frac{b}{2} + 10$$

Which shows the equation solved for b ?

- A. $b = C + 12$ B. $b = C - 12$
- C. $b = 2C - 10$ D. $b = 2C - 20$

4. $(4x^2 - 2x + 8) - (x^2 + 3x - 2) =$

- A. $3x^2 + x + 6$ B. $3x^2 + x + 10$
- C. $3x^2 - 5x + 6$ D. $3x^2 - 5x + 10$

5. Which of the following expressions is equal to $(x + 2) + (x - 2)(2x + 1)$?

- A. $2x^2 - 2x$ B. $2x^2 - 4x$
- C. $2x^2 + x$ D. $4x^2 + 2x$

6. Jeremy, Michael, Shanan, and Brenda each worked the same math problem at the chalkboard. Each student's work is shown below. Their teacher said that while two of them had the correct answer, only one of them had arrived at the correct conclusion using correct steps.

Jeremy's work

$$x^3x^{-7} = \frac{x^3}{x^{-7}}$$

$$= x^{10}, x \neq 0$$

Shanan's work

$$x^3x^{-7} = \frac{x^3}{x^7}$$

$$= \frac{1}{x^4}, x \neq 0$$

Michael's work

$$x^3x^{-7} = \frac{x^3}{x^{-7}}$$

$$= x^{-4}, x \neq 0$$

Brenda's work

$$x^3x^{-7} = \frac{x^3}{x^7}$$

$$= x^4, x \neq 0$$

Which is a completely correct solution?

- A. Jeremy's work B. Michael's work
- C. Shanan's work D. Brenda's work

7. What is the least common multiple (LCM) of $3x^4y^2$ and $7xy^3$?

- A. $10xy^2$ B. $10x^5y^5$
C. $21x^4y^3$ D. $21x^5y^5$

8. Which is equivalent to the expression below?

$$(-4gh)(-10gh)$$

- A. $-14gh$ B. $-14g^2h^2$
C. $40gh$ D. $40g^2h^2$

9. Which answer choice is equivalent to $(x+5)(7+x)$?

- A. $2x^2 + 12x + 35$ B. $x^2 + 12x + 12$
C. $x^2 + 12x + 35$ D. $x^2 + 7x + 40$

10. The area of a certain square is $x^2 + 4x + 4$. The area of a certain triangle is $3x + 12$. What is the difference in the areas of the two shapes?

- A. $x^2 + x - 8$ B. $x^2 + 4x - 8$
C. $x^2 + x + 16$ D. $x^2 + 7x + 16$

11. If $x - 3$ is a factor of $x^2 + x - 12$, then the other factor is

- A. $4x - 3$ B. $3x - 4$ C. $x - 4$ D. $x + 4$

12. When the expressions $x^2 - 9$ and $x^2 - 5x + 6$ are factored, a common factor is

- A. $x + 3$ B. $x - 3$ C. $x - 2$ D. x^2

13. Which expression is equivalent to $x^2 + 7x + 6$?

- A. $(x + 6)(x + 1)$ B. $(x + 3)(x + 2)$
C. $(x + 1)(x + 7)$ D. $x(x + 7)$

14. Expressed in factored form, the binomial $2x^2y - 4xy^3$ is equivalent to

- A. $2xy(x - 2y)$ B. $2xy(xy - 4y)$
C. $2xy(x - 2y^2)$ D. $2x^2y^3(y - 2)$

15. Written in factored form, the binomial $4x^2 - 9$ is equivalent to

- A. $(2x - 3)(2x - 3)$ B. $(2x - 3)(2x + 3)$
C. $(4x - 9)(x + 1)$ D. $(4x + 1)(x - 9)$

16. Which expression is factored form $2x^2 - 2x - 12$?

- A. $2(x + 2)(x - 3)$ B. $2(x + 6)(x - 1)$
C. $2(x + 3)(x - 2)$ D. $2(x + 1)(x - 6)$

17. Which expression represents $\frac{-14a^2c^8}{7a^3c^2}$ in simplest form?

- A. $-2ac^4$ B. $-2ac^6$ C. $\frac{-2c^4}{a}$ D. $\frac{-2c^6}{a}$

18. Which expression represents $\frac{x^2 - x - 6}{x^2 - 5x + 6}$ in simplest form?

A. $\frac{x+2}{x-2}$

B. $\frac{-x-6}{-5x+6}$

C. $\frac{1}{5}$

D. -1

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Operations with Polynomials Keystone Practice #4 11/13/2013

1.
Answer: B
2.
Answer: C
3.
Answer: D
4.
Answer: D
5.
Answer: A
6.
Answer: C
7.
Answer: C
8.
Answer: D
9.
Answer: C
10.
Answer: A
11.
Answer: D
12.
Answer: B
13.
Answer: A
14.
Answer: C
15.
Answer: B
16.
Answer: A
17.
Answer: D
18.
Answer: A