

Name: _____

Date: _____

Mrs. Roubos

8A Period _____

Monomial/Polynomial & Factoring Review

Questions 1 through 3 refer to the following:

Simplify the given expression:

1) $7pq + 8qr - 9pq - 8qr$

A) $2pq$

C) $-2qr$

B) $-2pq$

D) $2qr$

2) $(5x^2 - 9x + 3) + (4x^2 + 4x - 12)$

A) $9x^2 - 13x - 9$

C) $9x^2 - 5x - 9$

B) $9x^2 + 5x - 9$

D) $9x^2 - 13x + 9$

3) $(3x^2 - 4xy + 7y^2) - (7x^2 - 6xy - 3y^2)$

A) $-4x^2 - 10xy + 10y^2$

B) $4x^2 - 10xy + 10y^2$

C) $-4x^2 - 2xy + 10y^2$

D) $-4x^2 + 2xy + 10y^2$

Questions 4 and 5 refer to the following:

Find the quotient of the given expression:

4) $\frac{7ab^2 - 5a^2b}{ab}$

5) $\frac{8x^3 - 12x^2 + 4x}{-4x}$

Questions 6 and 7 refer to the following:

Find the product of the given expression:

6) $5x^3(2x^4 - x^3 + 3)$

A) $7x^7 - 5x^6 + 15x^3$

B) $10x^7 - 5x^6 + 15x^3$

C) $10x^7 - x^3 + 3$

D) $10x^{12} - x^9 + 15x^3$

7) $6x^3y^2(4x^4 - 3xy)$

A) $24x^7y - 18x^4y^3$

B) $24x^{12}y^2 - 18x^4y^3$

C) $10x^7y^2 - 9x^4y^3$

D) $24x^7y^2 - 18x^4y^3$

8) Find the product of the given terms:

$$(-2r^2s)(3rs)(-rs^3)$$

9) Find the quotient of the given terms:

$$\frac{20y^5z}{-4y^5z}$$

10) What are the factors of $2x^2 - 13x + 15$?

- A) $(2x - 3)(x - 5)$
- B) $(2x - 15)(x - 1)$
- C) $(2x - 5)(x - 3)$
- D) $(2x - 1)(x - 15)$

Questions 11 through 15 refer to the following:

Expand and simplify the given polynomials:

11) $(2x^2 + 3x - 4)(2x + 5)$

- A) $4x^3 + 16x^2 + 7x + 20$
- B) $4x^3 + 16x^2 + 23x - 20$
- C) $4x^3 + 16x^2 + 7x - 20$
- D) $4x^3 + 16x^2 - 23x - 20$

12) $(z - 7)(z - 1)$

13) $(y + 3)(5y + 1)$

14) $(13 - 2x)(13 - 2x)$

15) $(3x + y)^2$

Questions 16 through 20 refer to the following:

Factor the given polynomial:

16) $y^2 - 25$

- A) $(y + 5)(y - 5)$
- B) $(5 - y)(5 + y)$
- C) $(y - 5)(y - 5)$
- D) $(y + 5)(y + 5)$

17) $81 - 4x^2$

18) $6x^3 + 21x$

A) $3x(x^2 + 7)$

B) $3x(2x^2 - 7)$

C) $6x^2(2x + 7)$

D) $3x(2x^2 + 7)$

19) $30y + 15y^3$

20) $-12r^2v^2 - 20rv$

21) Expressed in factored form, the binomial $4a^2 - 9b^2$ is equivalent to

A) $(2a - 9b)(2a + b)$

B) $(2a - 3b)(2a - 3b)$

C) $(4a - 3b)(a + 3b)$

D) $(2a + 3b)(2a - 3b)$

22) What are the factors of $x^2 + 7x + 12$?

A) $(x + 12)(x + 1)$

C) $(x + 2)(x + 6)$

B) $(x + 4)(x + 3)$

D) $(x + 7)(x + 5)$

23) What are the factors of $5x^2 + 6xy - 8y^2$?

A) $(5x - 4y)(x + 2y)$

B) $(5x + 4y)(x - 2y)$

C) $(5x + 2y)(x - 4y)$

D) $(5x - 2y)(x + 4y)$

24) Which of the following represents $9x^2 + 36x + 36$ after it has been factored completely?

A) $9(x^2 + 4x + 4)$

B) $9(x + 2)^2$

C) $(9x + 18)(x + 2)$

D) $3(3x + 2)(x + 6)$

25) Factor completely: $3x^2 + 15x - 42$