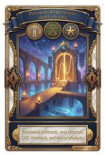
Polynomial Operations and Factoring

Polynomial arithmetic, area structure, GCF, trinomials, and special products.

Name _____ Date _____

32 main · 2-up grid · 11 pages · visible side quests

Completion Reward



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1. Which expression is a trinomial?

A. 4x - 7
B. x^2 + 3x + 1
C. 9
D. x(x + 2)

1.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

1.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

1.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

1.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

1.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

2. What is the degree of the term 6x^3?

A. 3
B. 6
C. 9
D. 1

2.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

2.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

2.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

2.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

2.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

3. Which expression is equivalent to (3x^2 + 2x - 1) + (x^2 - 5x + 4)?

A. 4x^4 - 3x + 3
B. 2x^2 - 3x + 5
C. 4x^2 + 7x + 3
D. 4x^2 - 3x + 3

3.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

3.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

3.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

3.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

3.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

4. Which expression is equivalent to 3x(2x + 5)?

A. 6x + 15x
B. 5x^2 + 6x
C. 6x^2 + 5
D. 6x^2 + 15x

4.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

4.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

4.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

4.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

4.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

5. Which expression is the factored form of 6x + 18?

A. 3(2x + 18)
B. 6x(1 + 3)
C. 6(x + 3)
D. 2(3x + 18)

5.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

5.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

5.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

5.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

5.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

6. Which expression is equivalent to 3x^2 - 12?

A. (3x - 2)(x + 2)
B. 3(x - 4)
C. (x - 6)(x + 2)
D. 3(x - 2)(x + 2)

6.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

6.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

6.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

6.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

6.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

7. Which pair are like terms?

A. 5x^2 and -3x^2
B. 5x and 5x^2
C. 4x and 4y
D. 7 and 7x

7.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

7.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

7.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

7.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

7.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

8. Which expression is equivalent to 9y + 27?

A. 3(y + 9)
B. 9(y + 27)
C. 9(y + 3)
D. 27(y + 9)

8.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

8.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

8.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

8.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

8.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

9. A rectangle has side lengths x + 3 and x + 5. Which expression gives its area?

A. x^2 + 8x + 15
B. 2x + 8
C. x^2 + 15
D. x^2 + 2x + 15

9.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

9.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

9.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

9.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

9.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

10. What is the best first step to factor 3x^2 + 12x?

A. Factor out 3x.
B. Try to make two binomials immediately.
C. Add the exponents to get x^3.
D. Divide every term by x^2.

10.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

10.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

10.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

10.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

10.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

11. What is the best first step when factoring 3x^2 + 15x?

A. Multiply the terms together.
B. Set the expression equal to 0 immediately.
C. Factor out the greatest common factor 3x.
D. Take the square root of both terms.

11.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

11.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

11.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

11.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

11.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

12. A student says x(x + 4) = x^2 + 4. What is the mistake?

A. They should have subtracted 4 instead.
B. They did not distribute x to the 4.
C. They should have added exponents on 4.
D. The expression should equal x^2 only.

12.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

12.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

12.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

12.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

12.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

13. A student says (4x + 3) - (x - 2) = 3x + 1. What is the mistake?

A. They should have added the x terms instead of subtracting them.
B. They should have squared both binomials first.
C. They did not distribute the subtraction to both terms in the second polynomial.
D. They should have factored out x before subtracting.

13.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

13.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

13.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

13.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

13.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

14. A student says x^2 + 5x + 6 = (x + 6)(x - 1). What is the problem?

A. Binomials can never factor a trinomial.
B. The middle term should always be negative.
C. The constant term 6 should be outside the factors.
D. The factors do not multiply back to x^2 + 5x + 6.

14.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

14.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

14.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

14.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

14.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

15. Which expression is equivalent to (5x^2 + 3x - 2) - (2x^2 - x + 7)?

A. 3x^2 + 2x + 5
B. 7x^2 + 2x - 9
C. 3x^2 + 4x - 9
D. 3x^2 - 4x - 5

15.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

15.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

15.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

15.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

15.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

16. Which expression is equivalent to (x + 2)(x + 5)?

A. x^2 + 7x + 10
B. x^2 + 10
C. 2x^2 + 7x + 10
D. x^2 + 3x + 10

16.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

16.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

16.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

16.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

16.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

17. Which expression is the factored form of x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. x(x - 16)

17.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

17.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

17.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

17.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

17.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

18. Which expression is the factored form of x^2 - x - 12?

A. (x - 6)(x + 2)
B. (x - 3)(x - 4)
C. (x - 4)(x + 3)
D. (x + 4)(x - 3)

18.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

18.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

18.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

18.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

18.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

19. Simplify (3x^2 + 2x) + (x^2 - 5x). Answer with your final expression.

19.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

19.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

19.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

19.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

19.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

20. Simplify (5x^2 + 4x - 1) - (2x^2 + x - 3). Answer with your final expression.

20.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

20.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

20.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

20.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

20.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

21. Expand 2x(x + 7). Answer with an equivalent expression.

21.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

21.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

21.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

21.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

21.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

22. Factor 6x + 12. Answer in factored form.

22.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

22.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

22.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

22.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

22.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

23. Factor 4x^2 + 8x. Answer in factored form.

23.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

23.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

23.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

23.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

23.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

24. Factor x^2 + 7x + 12. Answer in factored form.

24.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

24.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

24.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

24.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

24.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

25. Factor x^2 - 25. Answer in factored form.

25.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

25.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

25.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

25.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

25.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

26. Expand (x + 2)(x + 5). Answer with an equivalent expression.

26.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

26.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

26.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

26.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

26.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

27. Factor x^2 + 9x + 20. Answer in factored form.

27.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

27.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

27.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

27.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

27.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

28. Which expression is the factored form of x^2 + 7x + 12?

A. (x + 3)(x + 4)
B. (x + 6)(x + 2)
C. (x + 12)(x + 1)
D. (x + 4)^2

28.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

28.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

28.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

28.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

28.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

29. Expand (x + 1)(x - 6). Answer with an equivalent expression.

29.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

29.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

29.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

29.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

29.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

30. Which is the best first move to factor 2x^2 + 8x?

A. Use the quadratic formula immediately.
B. Multiply the terms to get 16x^3 first.
C. Rewrite it as 10x^2.
D. Pull out the greatest common factor 2x first.

30.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

30.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

30.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

30.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

30.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

31. Which pair of numbers helps factor x^2 + 9x + 20?

A. 2 and 10
B. 4 and 5
C. 1 and 20
D. -4 and -5

31.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

31.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

31.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

31.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

31.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15

32. Factor 2x^2 + 10x + 12. Answer in factored form.

32.1. What is (3x^2 + 2x) + (x^2 - x)?

A. 4x^2 + x
B. 3x^4 + x
C. 4x^2 + 3x
D. 2x^2 + x

32.2. What is (2x)(3x^2)?

A. 5x^2
B. 6x^2
C. 6x^3
D. 6x

32.3. Which is a factorization of 6x + 9?

A. 3(2x + 3)
B. 6(x + 9)
C. 9(6x + 1)
D. 3(x + 3)

32.4. Which matches x^2 - 16?

A. (x - 4)(x + 4)
B. (x - 8)(x + 2)
C. (x - 4)^2
D. (x + 8)(x - 2)

32.5. If (x - 3)(x + 5) = 0, which is a zero?

A. 8
B. 3
C. -8
D. 15