

A.A.20: Factoring Polynomials 2: Factor algebraic expressions completely, including trinomials with a lead coefficient of one (after factoring a GCF)

- 1 What are the factors of $x^2 - 10x - 24$?
- 2 What are the factors of $x^2 - 5x + 6$?
- 3 What are the factors of the expression $x^2 + x - 20$?
- 4 Factored completely, the expression $2x^2 + 10x - 12$ is equivalent to
- 5 Factored completely, the expression $2y^2 + 12y - 54$ is equivalent to
- 6 Factored completely, the expression $3x^2 - 3x - 18$ is equivalent to
- 7 Factored completely, the expression $3x^3 - 33x^2 + 90x$ is equivalent to
- 8 Factor completely: $3x^2 + 15x - 42$
- 9 Factor completely: $x^3 - x^2 - 6x$
- 10 Factor completely: $5x^3 - 20x^2 - 60x$
- 11 If $x + 2$ is a factor of $x^2 + bx + 10$, what is the value of b ?
- 12 Which expression is a factor of $x^2 + 2x - 15$?
 - 1) $(x - 3)$
 - 2) $(x + 3)$
 - 3) $(x + 15)$
 - 4) $(x - 5)$
- 13 Which expression is a factor of $n^2 + 3n - 54$?
 - 1) $n + 6$
 - 2) $n^2 + 9$
 - 3) $n - 9$
 - 4) $n + 9$
- 14 Which is a factor of $x^2 + 5x - 24$?
 - 1) $(x + 4)$
 - 2) $(x - 4)$
 - 3) $(x + 3)$
 - 4) $(x - 3)$
- 15 If $3x$ is one factor of $3x^2 - 9x$, what is the other factor?
- 16 If one factor of $56x^4y^3 - 42x^2y^6$ is $14x^2y^3$, what is the other factor?
- 17 The greatest common factor of $3m^2n + 12mn^2$ is?

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Answer Section

1 ANS:

$$(x - 12)(x + 2)$$

$$x^2 - 10x - 24 = (x - 12)(x + 2)$$

REF: 010318a

2 ANS:

$$(x - 2) \text{ and } (x - 3)$$

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

REF: 010814a

3 ANS:

$$(x + 5) \text{ and } (x - 4)$$

REF: 061105ia

4 ANS:

$$2(x + 6)(x - 1)$$

$$2x^2 + 10x - 12 = 2(x^2 + 5x - 6) = 2(x + 6)(x - 1)$$

REF: 080806ia

5 ANS:

$$2(y + 9)(y - 3)$$

$$2y^2 + 12y - 54 = 2(y^2 + 6y - 27) = 2(y + 9)(y - 3)$$

REF: 060623a

6 ANS:

$$3(x - 3)(x + 2)$$

REF: 061027ia

7 ANS:

$$3x(x - 5)(x - 6)$$

$$3x^3 - 33x^2 + 90x = 3x(x^2 - 11x + 30) = 3x(x - 5)(x - 6)$$

REF: 061227ia

8 ANS:

$$3(x + 7)(x - 2). \quad 3x^2 + 15x - 42 = 3(x^2 + 5x - 14) = 3(x + 7)(x - 2)$$

REF: 060535a

9 ANS:

$$x(x - 3)(x + 2)$$

REF: 018912siii

10 ANS:

$$5x^3 - 20x^2 - 60x$$

$$5x(x^2 - 4x - 12)$$

$$5x(x+2)(x-6)$$

REF: 011332ia

11 ANS:

7

REF: 010007siii

12 ANS: 1

$$x^2 + 2x - 15 = (x+5)(x-3)$$

REF: 010004a

13 ANS: 4

$$z^2 + 3z - 54 = (z+9)(z-6)$$

REF: 060206a

14 ANS: 4

$$x^2 + 5x - 24 = (x+8)(x-3)$$

REF: spring9806a

15 ANS:

$$x - 3$$

$$3x^2 - 9x = 3x(x-3)$$

REF: 060421a

16 ANS:

$$4x^2 - 3y^3$$

$$56x^4y^3 - 42x^2y^6 = 14x^2y^3(4x^2 - 3y^3)$$

REF: 060318a

17 ANS:

$$3mn$$

$$3mn(m+4n)$$

REF: 011402ia