

P. 544 (3-6, 11, 22)

Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms.

3. $4x^4 + 1x^2 - 10 + 12x^4 - 7x^2 - 6x^4$

4. $3k^5 + 4k^2 - 6k^5 - 5k^2$

$-3k^5 - k^2$

binomial (3) $8x^4 - 6x^2 - 10$
 quintic quartic
trinomial

Simplify. Write each answer in standard form

5. $(4x^2 + 2x + 5) + (7x^2 - 5x + 2)$

6. $(9a^2 - 4 - 5a) - (12a - 6a^2 + 3)$

$9a^2 - 4 - 5a - 12a + 6a^2 - 3$

$15a^2 - 17a - 7$

Simplify each product. Write in standard form.

11. $8b(3b + 7 - b^2)$

Find the GCF of the terms of each polynomial.

22. $21x^4 + 18x^2 + 36x^3 = 3x^2(7x^2 + 6 + 12x)$

$21x^4 = 3 \cdot 7 \cdot x \cdot x \cdot x \cdot x$

$18x^2$

$36x^3$

① $ax^2 + bx + c$
 $(+)(+)$

② $ax^2 - bx + c$
 $(-)(+)$

③ $ax^2 - bx - c$
 $(x = \text{big})(x = \text{small})$

④ $ax^2 + bx - c$
 $(x = \text{small})(x = \text{big})$

Check Skills You'll Need Day 79

Find the GCF of the terms of each polynomial.

1. $12x^2 + 6x$
 $6 \cdot 2x \cdot x + 6 \cdot x \cdot 1$
 $6x(2x+1)$

2. $28m^2 - 35m + 14$
 $7 \cdot 4m \cdot m - 7 \cdot 5m + 7 \cdot 2$
 $7(4m^2 - 5m + 2)$

3. $4v^3 + 36v^2 + 10$
 $2 \cdot 2v \cdot v \cdot v + 2 \cdot 18v \cdot v + 2 \cdot 5$
 $2(2v^3 + 18v^2 + 5)$

Factor each expression.

4. $x^2 + 5x + 4$ $\frac{4}{2 \cdot 2} \quad \frac{1}{1 \cdot 4}$
 $(x+1)(x+4)$

5. $y^2 - 3y - 28$
 $(y-7)(y+4)$

6. $t^2 - 11t + 30$ $\frac{30}{-7 \cdot -4}$
 $(t-5)(t-6)$

Lesson 9-6

Lesson Objective
 Factor trinomials of the type $ax^2 + bx + c$ $a \neq 1$

Examples Factor $20x^2 + 17x + 3$.

1st: $a \cdot c$
 Find what multiplies to get $a \cdot c$
 and adds to get b

$20 \cdot 3 = 60$

1	60
2	30
3	20
4	15
5	12
6	10

split the middle term \rightarrow $5x + 12x$

2nd: Rewrite
 $20x^2 + 5x + 12x + 3$

3rd: split down middle
 $4(5x+3) + 3(4x+1)$

Factor GCF on each side
 $(4x+1)(5x+3)$

$20x^2 + 12x + 5x + 3$
 $20x^2 + 17x + 3$

Factor $3n^2 - 7n - 6$. $a \cdot c$
 $3(-6) = -18$

$a=3 \quad b=-7 \quad c=-6$

$3n^2 - 9n + 2n - 6$
 $3 \cdot n \cdot n - 3 \cdot 3 \cdot n + 2 \cdot n - 2 \cdot 3$
 $3n(n-3) + 2(n-3)$
 $(n-3)(3n+2)$

-1	+18
-2	9
-3	6
1	-18
2	-9
3	-6

3. Factoring Out a Monomial First Factor $18x^2 + 33x - 30$ completely.

Quick Check

1. Factor each expression.

a. $2y^2 + 5y + 2$

$$\begin{array}{l} 2y^2 + 1y + 4y + 2 \\ 2 \cdot y^2 + 1y \quad 2 \cdot 2y + 2 \cdot 1 \end{array}$$

$$y(2y+1) + 2(2y+1)$$

$$(y+2)(2y+1)$$

$$\begin{array}{r} 2 \cdot 2 = 4 \\ 1 \overline{) 4} \\ 2 \overline{) 2} \end{array}$$

b. $6n^2 - 23n + 7$

$$\begin{array}{l} 6n^2 - 2n - 21n + 7 \\ 3(2n - 2n) \quad (-7)^3 \quad (-7) \cdot 1 \end{array}$$

$$2n(3n-1) - 7(3n-1)$$

$$(3n-1)(2n-7)$$

$$\begin{array}{r} 6 \cdot 7 = 42 \\ -2 \overline{) -2} \end{array}$$

c. $2y^2 - 5y + 2$

2. a. $5d^2 - 14d - 3$

b. $2n^2 + n - 3$

c. $20p^2 - 31p - 9$

3. a. $2v^2 - 12v + 10$

b. $4y^2 + 14y + 6$

c. $18k^2 - 12k - 6$

WIKBK p.421

Name:

Block:

Date:

6

12

24

33

36

51

78

81

FIVE STAR

FIVE STAR

FIVE STAR

FIVE STAR

FIVE STAR

FIVE STAR

(3)

(1)

(4)

(5)

(6)

(14)

(16)

(17)