

Practice Exercises

Factor the following polynomials completely.

1. $x^2 - x - 20$

2. $x^2 + 17x + 72$

3. $a^2 + 10a + 24$

4. $m^2 + 4mn - 21n^2$

5. $2a^3 - 6a^2 - 36a$

6. $3x^3 - 27x^2y + 54xy^2$

Problem Set

Factor the following polynomials completely.

1. $x^2 + 4x - 21$

2. $x^2 - 5x - 14$

3. $2a^3 + 20a^2 + 48a$

4. $m^2 + m - 12$

5. $a^2 - 8a - 48$

6. $3m^2 + 6mn - 45n^2$

7. $2b^3 + 10b^2c - 28bc^2$

8. $c^2 - 11cd + 24d^2$

9. $5m^3 - 20m^2 + 15m$

10. $4a^2 + 24a - 64$

Problem Set

$$\begin{aligned} 1. \quad & x^2 + 4x - 21 \\ & = (x - 3)(x + 7) \end{aligned}$$

$$\begin{aligned} 2. \quad & x^2 - 5x - 14 \\ & = (x - 7)(x + 2) \end{aligned}$$

$$\begin{aligned} 3. \quad & 2a^3 + 20a^2 + 48a \\ & = 2a(a + 4)(a + 6) \end{aligned}$$

$$\begin{aligned} 4. \quad & m^2 + m - 12 \\ & = (m - 3)(m + 4) \end{aligned}$$

$$\begin{aligned} 5. \quad & a^2 - 8a - 48 \\ & = (a - 12)(a + 4) \end{aligned}$$

$$\begin{aligned} 6. \quad & 3m^2 + 6mn - 45n^2 \\ & = 3(m - 3n)(m + 5n) \end{aligned}$$

$$\begin{aligned} 7. \quad & 2b^3 + 10b^2c - 28bc^2 \\ & = 2b(b + 7c)(b - 2c) \end{aligned}$$

$$\begin{aligned} 8. \quad & c^2 - 11cd + 24d^2 \\ & = (c - 8d)(c - 3d) \end{aligned}$$

$$\begin{aligned} 9. \quad & 5m^3 - 20m^2 + 15m \\ & = 5m(m - 1)(m - 3) \end{aligned}$$

$$\begin{aligned} 10. \quad & 4a^2 + 24a - 64 \\ & = 4(a + 8)(a - 2) \end{aligned}$$