

Topic 7: Factor polynomials

Factor Completely.

1. $4x^2 + 4x - 48$

2. $3x^2 - 24x + 48$

3. $5x^5 - 45x$

4. $2x^2y^2 + 6xy^2 - 10xy^2 - 30y^2$

5. $4x^6 + 32y^3$

6. $pq + 6q + pr + 6r$

7. $x^3 + \frac{1}{27}$

8. $x^4 - 81$

9. $x^2 + 16x + 64 - 100y^2$

10. $x^4 - 2x^2y^2 + y^4$

Answers

1. $4(x+4)(x-3)$

2. $3(x-4)^2$

3. $5x(x^2+3)(x^2-3)$

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

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

6. $(q+r)(p+6)$

7. $\left(x + \frac{1}{3}\right)\left(x^2 - \frac{1}{3}x + \frac{1}{9}\right)$

8. $(x^2+9)(x+3)(x-3)$

9. $(x+8+10y)(x+8-10y)$

10. $(x+y)^2(x-y)^2$