

Factoring- Putting It all together

Short Answer

1. Factor the binomial $28a + 63a^2$.
2. Factor the trinomial $10 - 20n + 30n^2$.
3. Factor: $t^2 + 9t - 36$
4. Factor: $-2b^2 + 6b + 80$
5. Factor: $2n^2 + 29n - 15$
6. Factor: $121a^2 + 176a + 64$
7. Factor: $36 - 132r + 121r^2$
8. Factor: $100p^2 - 9q^2$
9. Factor: $25s^2 - 60st + 36t^2$
10. Factor: $3z^4 - 675z^2$
11. Factor: $38m^2 - 79mn + 33n^2$
12. Factor the trinomial $4m^2n - 6n^2 - 2mn$.
13. Factor: $9z^2 - 30z + 21$
14. Factor: $36a^2 + 60ab + 25b^2$

Problem

15. Factor. Explain your steps.
 $32x^2 - 18y^2$

Factoring- Putting It all together Answer Section

SHORT ANSWER

1. ANS:
 $7a(4 + 9a)$
PTS: 1 DIF: Easy REF: 3.3 Common Factors of a Polynomial
LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
2. ANS:
 $10(1 - 2n + 3n^2)$
PTS: 1 DIF: Easy REF: 3.3 Common Factors of a Polynomial
LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
3. ANS:
 $(t + 12)(t - 3)$
PTS: 1 DIF: Easy REF: 3.5 Polynomials of the Form $x^2 + bx + c$
LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
4. ANS:
 $-2(b + 5)(b - 8)$
PTS: 1 DIF: Moderate REF: 3.5 Polynomials of the Form $x^2 + bx + c$
LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
5. ANS:
 $(2n - 1)(n + 15)$
PTS: 1 DIF: Easy REF: 3.6 Polynomials of the Form $ax^2 + bx + c$
LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
6. ANS:
 $(11a + 8)^2$
PTS: 1 DIF: Easy REF: 3.8 Factoring Special Polynomials
LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
7. ANS:
 $(6 - 11r)^2$
PTS: 1 DIF: Easy REF: 3.8 Factoring Special Polynomials
LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
8. ANS:
 $(10p + 3q)(10p - 3q)$
PTS: 1 DIF: Easy REF: 3.8 Factoring Special Polynomials
LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
9. ANS:
 $(5s - 6t)^2$

- PTS: 1 DIF: Easy REF: 3.8 Factoring Special Polynomials
 LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
10. ANS:
 $3z^2(z + 15)(z - 15)$
- PTS: 1 DIF: Moderate REF: 3.8 Factoring Special Polynomials
 LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
11. ANS:
 $(19m - 11n)(2m - 3n)$
- PTS: 1 DIF: Moderate REF: 3.8 Factoring Special Polynomials
 LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
12. ANS:
 $2n(2m^2 - 3n - m)$
- PTS: 1 DIF: Easy REF: 3.3 Common Factors of a Polynomial
 LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
13. ANS:
 $3(3z - 7)(z - 1)$
- PTS: 1 DIF: Moderate REF: 3.6 Polynomials of the Form $ax^2 + bx + c$
 LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge
14. ANS:
 $(6a + 5b)^2$
- PTS: 1 DIF: Easy REF: 3.8 Factoring Special Polynomials
 LOC: 10.AN5 TOP: Algebra and Number KEY: Procedural Knowledge

PROBLEM

15. ANS:
 $32x^2 - 18y^2$

As written, each term of the binomial is not a perfect square. But the terms have a common factor 2. Remove this common factor.

$$32x^2 - 18y^2$$

$$= 2(16x^2 - 9y^2)$$

Write each term in the binomial as a perfect square.

$$2(16x^2 - 9y^2) = 2 \left[(4x)^2 - (3y)^2 \right] \quad \text{Write these terms in binomial factors.}$$

$$= 2(4x - 3y)(4x + 3y)$$

PTS: 1 DIF: Moderate REF: 3.8 Factoring Special Polynomials

LOC: 10.AN5 TOP: Algebra and Number
KEY: Communication | Problem-Solving Skills