

5-4

Skills Practice

Factoring Polynomials

Factor completely. If the polynomial is not factorable, write *prime*.

1. $7x^2 - 14x$

$7x(x-2)$

3. $21x^3 - 18x^2y + 24xy^2$

$3x(7x^2 - 6xy + 8y^2)$

5. $a^2 + 7a - 18$

$(a-2)(a+9)$

7. $b^2 + 8b + 7$

$(b+1)(b+7)$

9. $m^2 + 7m - 18$

$(m-2)(m+9)$

11. $4z^2 + 4z - 15$

$(2z-3)(2z+5)$

13. $3y^2 + 21y + 36$

$3(y+4)(y+3)$

15. $4f^2 - 64$

$4(f+4)(f-4)$

17. $9x^2 + 25$

PRIME

19. $n^3 - 125$

$(n-5)(n^2 + 5n + 25)$

2. $19x^3 - 38x^2$

$19x^2(x-2)$

4. $8j^3k - 4jk^3 - 7$

prime

6. $2ak - 6a + k - 3$

$(2a+1)(k-3)$

8. $z^2 - 8z - 10$

(PRIME)

10. $2x^2 - 3x - 5$

$(2x-5)(x+1)$

12. $4p^2 + 4p - 24$

$4(p+3)(p-2)$

14. $c^2 - 100$

$(c+10)(c-10)$

16. $d^2 - 12d + 36$

$(d-6)^2$ or $(d-6)(d-6)$

18. $y^2 + 18y + 81$

$(y+9)^2$ or $(y+9)(y+9)$

20. $m^4 - 1$

$(m^2+1)(m+1)(m-1)$

Simplify. Assume that no denominator is equal to 0.

21. $\frac{x^2 + 7x - 18}{x^2 + 4x - 45}$

$\frac{y-2}{x+5}$

22. $\frac{x^2 + 4x + 3}{x^2 + 6x + 9}$

$\frac{x+1}{x+3}$

23. $\frac{x^2 - 10x + 25}{x^2 - 5x}$

$\frac{x-5}{x}$

24. $\frac{x^2 + 6x - 7}{x^2 - 49}$

$\frac{x-1}{x-7}$