

Appendix, Algebra Review

ODD Focus Exercise Answers

Section A.1 Multiplying Binomials

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|-------------------------|---------------------------|---------------------------|
| 1. $6x^2 + 10x - 24$ | 3. $12u^2 + 7u - 12$ | 5. $12n^4 + 32n^2 + 5$ |
| 7. $10r^6 - 17r^3 + 3$ | 9. $x^2 + 14x + 49$ | 11. $25y^2 - 30y + 9$ |
| 13. $9c^4 - 30c^2 + 25$ | 15. $A^6 + 20a^3 + 100$ | 17. $(x - 5); x^2 - 25$ |
| 19. $(r + 8); r^2 - 64$ | 21. $(2c - 9); 4c^2 - 81$ | 23. $(x^2 + 8); x^4 - 64$ |

Section A.2 Factoring Trinomials

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|------------------------|------------------------|------------------------|
| 1. $(4x + 3)(x + 2)$ | 3. $(2y + 1)(5y + 2)$ | 5. $(5v + 4)(v - 2)$ |
| 7. Prime | 9. $(h - 8)^2$ | 11. $(3r - 1)(5r + 3)$ |
| 13. $(5x - 6)(2x - 1)$ | 15. $(5m + 1)(4m - 3)$ | 17. $(x - 12)(x + 12)$ |
| 19. $(7x + 1)(7x - 1)$ | 21. $(9x - 4)(9x + 4)$ | 23. $w(w + 5)(w - 5)$ |

Section A.3 Solving Quadratic Equations

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|--------------------------|------------------------------------|--------------------------|
| 1. $x = 0, 9$ | 3. $p = 10, -9$ | 5. $p = \frac{5}{3}, -2$ |
| 7. $x = -\frac{5}{3}, 3$ | 9. $v = \frac{5}{4}, -\frac{3}{2}$ | 11. $x = -9, 9$ |
| 13. $m = 7, 11$ | | |

Section A.4 Rationalizing the Denominator

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|---|---|---------------------------------|
| 1. $(2 + \sqrt{3}); 1$ | 3. $(\sqrt{6} + \sqrt{2}); 4$ | 5. $(\sqrt{10} + 2\sqrt{2}); 2$ |
| 7. $4\sqrt{3}$ | 9. $\frac{\sqrt{10}}{2}$ | 11. $\frac{\sqrt{14}}{6}$ |
| 13. $\frac{1}{\sqrt{3}} \approx 0.5773$ | 15. $\frac{1}{\sqrt{6}} \approx 0.4082$ | 17. $4 - \sqrt{11}$ |
| 19. $-5 - 2\sqrt{5}$ | | |

Section A.5 Complex Fractions

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|-------------------|-----------------------|--------------------|------------------|
| 1. $\frac{8}{15}$ | 3. $\frac{6}{5}$ | 5. $\frac{-9}{10}$ | 7. $\frac{1}{5}$ |
| 9. $\frac{w}{2}$ | 11. $\frac{x + 6}{6}$ | | |

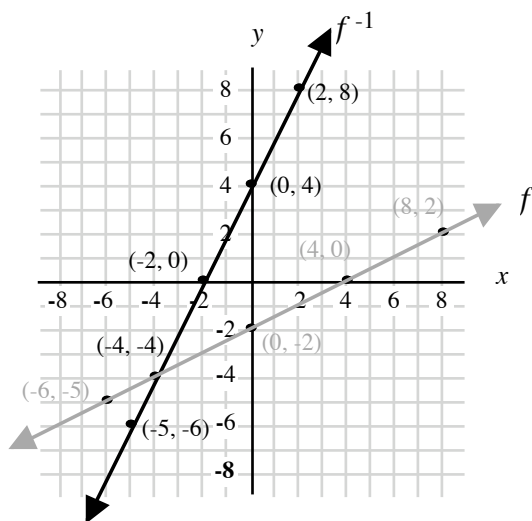
Section A.6 Functions

1. Domain: $(-\infty, \infty)$ or \mathbb{R}
Range: $[2, \infty)$ or $y \geq 2$
3. Domain: $[-5, \infty)$ or $x \geq -5$
Range: $[0, \infty)$ or $y \geq 0$
5. Domain: $[3, \infty)$ or $x \geq 3$
7. Domain: $(-\infty, \infty)$ or \mathbb{R}
9. Domain: $x \neq -2, 2$ or $\mathbb{R} - \{-2, 2\}$
11. $f(2) = 3$
13. $f\left(-\frac{1}{2}\right) = 2$
15. $g(0) = 2$
17. $g(-1) = 4$
19. $f(3w) = 6w - 3$
21. $g(x - 2) = x^2 - 5x + 8$
23. $f \circ g(x) = 2x^2 - 2x + 1$
25. $f(-x) = \frac{2}{3}x = -f(x)$
 $f(x)$ is an odd function.
27. $h(-x) = -\sqrt[3]{x} = -h(x)$
 $h(x)$ is an odd function.
29. $g(-x) = 4 - x^2 = g(x)$
 $g(x)$ is an even function.

Section A.7 Inverse Functions

1. f is one-to-one; $f^{-1}(x) = \{(8, -3), (4, 2), (1, 5), (-3, 4), (5, 1)\}$
3. $f^{-1}(5) = 2$
5. $f(1) = -3$

7.



9. $f^{-1}(x) = \frac{x - 10}{3}$

11. $f^{-1}(x) = \frac{x^3 - 6}{5}$