

Answers

4.3 Extra Practice

1. $x + 9 + \frac{39}{x - 3}$

2. $x - 4 + \frac{16x - 64}{x^2 - 16}$

3. $x^2 + 3x + 6$

4. $x^2 + 3x + 8 + \frac{11x}{x^2 - x}$

5. $x - 8 - \frac{14}{x - 2}$

6. $x^2 + 2x + 2$

7. $2x^2 - 6x + 18 - \frac{108}{x + 3}$

8. $2x^3 - 3x^2 - x + \frac{4}{x - 4}$

9. A; $(4)^2 - (4) - 8 = 4$ so the remainder must be 4.

10. D; $(4)^2 - (4) + 8 = 20$ so the remainder must be 20.

11. B; $(4)^2 + (4) - 8 = 12$ so the remainder must be 12.

12. C; $(4)^2 + (4) + 8 = 28$ so the remainder must be 28.

13. $f(2) = -48$

14. $f(-1) = 4$

15. $f(-5) = -560$

16. $f(3) = 78$

17. $k = 46$

4.3 Review & Refresh

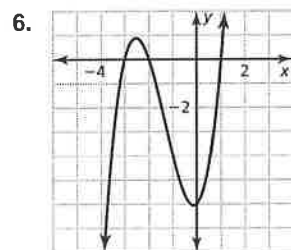
1. $x = 7$

2. $x = \pm 5i$

3. $f(-2) = -15$

4. $y = \frac{1}{3}(x + 1)^2 - 2$

5. $k = 2$



7. $2x^2 - 2x + 2 + \frac{-5x + 7}{x^2 + x - 3}$

8. $x = 9$

9. $x = -4$

10. $\frac{1}{4}$, or 25%

11. $2x^2\sqrt{10x}$

12. $\frac{\sqrt{5}}{8}$

13. $-2\sqrt{3}$

14. at least 10 yd and at most 90 yd

4.4 Extra Practice

1. $20x(x - 6)(x - 5)$

2. $m(m + 3)(m - 3)(m^2 + 9)$

3. $(3a + 2b)(9a^2 - 6ab + 4b^2)$

4. $t^3(5t + 2)(t + 1)(t - 1)$

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

6. $5(p - 1)(p^2 + 1)$

7. $10(3k + 2)(3k - 2)(9k^2 + 4)$

8. $(a^2 + 1)(a^2 + a + 1)(a - 1)$

9. $2x^4(x - 7)(x + 3)$

10. $(5z^2 - 6)(z + 1)$

11. $2(2x - 5)(3x + 2)$

12. $3m^2(1 - 2m)(1 + 2m)(1 + 4m^2)$

13. $x(2x - 1)^2$

14. $5m^2(m - 7)^2$

15.
$$\begin{array}{r|rrrr} -1 & 1 & 0 & -13 & -12 \\ & & -1 & 1 & 12 \\ \hline & 1 & -1 & -12 & 0 \end{array}$$

$f(x) = (x + 1)(x - 4)(x + 3)$

16.
$$\begin{array}{r|rrrr} 2 & 6 & 8 & -34 & -12 \\ & & 12 & 40 & 12 \\ \hline & 6 & 20 & 6 & 0 \end{array}$$

$f(x) = 2(x - 2)(x + 3)(3x + 1)$

Answers

$$17. \begin{array}{r|rrrr} 5 & 2 & -12 & 6 & 20 & 0 \\ & & 10 & -10 & -20 & 0 \\ \hline & 2 & -2 & -4 & 0 & 0 \end{array}$$

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

18. a. $(a + b)(a - b)(5c - 3d)$

b. $(x^n + 3)^2$

19. $k = 9$

$$6 \begin{array}{r|rrrr} 3 & -17 & -9 & 18 \\ & 18 & 6 & -18 \\ \hline & 3 & 1 & -3 & 0 \end{array}$$

4.4 Review & Refresh

1. $x = 1$ and $x = -11$; Explanations will vary.

2. $x = \frac{1}{4}$ and $x = 7$; Explanations will vary.

3. $x = -3 \pm \sqrt{26}$; Explanations will vary.

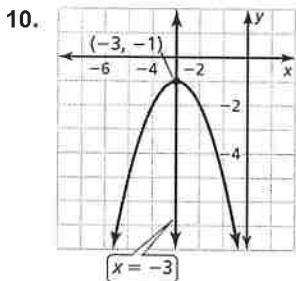
4. $x = \frac{3 \pm \sqrt{17}}{4}$; Explanations will vary.

5. $-x^2 + 4x - 3$

6. The area is $3x^2 - 7x + 2$ and the perimeter is $8x - 10$.

7. $(z + 3)(z - 3)(z - 4)$ 8. $(9b^2 - 5)(9b^2 + 5)$

9. exponential growth function; The common factor is $\frac{3}{2}$.



11. yes; $y = 15x + 88$; 448; You have \$448 in your savings account after 24 months.

4.5 Extra Practice

1. $r = 0$, $r = \frac{1}{6}$, and $r = -\frac{1}{6}$

2. $x = 0$, $x = -1$, and $x = -3$

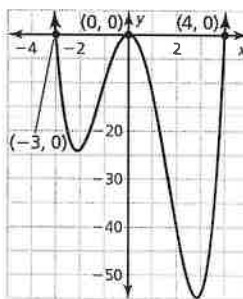
3. $m = 0$, $m = \frac{1}{5}$, and $m = -\frac{1}{5}$

4. $y = 3$, $y = -3$, $y = -2$, and $y = 2$

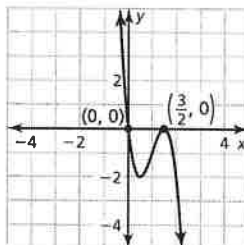
5. $x = \frac{1}{2}$, $x = -1$, and $x = 1$

6. $c = \frac{5}{2}$ and $c = -\frac{5}{2}$

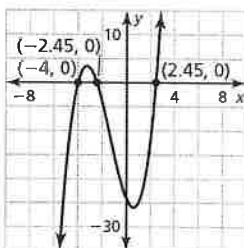
7. $x = 0$, $x = -3$, and $x = 4$



8. $x = 0$ and $x = \frac{3}{2}$



9. $x = -4$, $x = \sqrt{6}$, and $x = -\sqrt{6}$



10. $x = -3$ and $x = 3$

