

Pre-Calculus A
Chapter 4 Review Answers

Calculator:

1. $f(x) = x^4 + 5x^3 - 4x^2 - 44x - 48$

2. $f(x) = x^5 - 8x^4 + 23x^3 - 28x^2 + 22x - 20$

3. real zeros: $x = -3, 1, \frac{5}{3}$

factored form: $f(x) = (x + 3)(x - 1)(3x - 5)$

4. real zeros: $x = 5, -5$

factored form: $f(x) = (x + 5)(x - 5)(x^2 + 3)$

5. real zeros: $x = \pm\sqrt{5}, \frac{2}{7}$

factored form: $f(x) = (x + \sqrt{5})(x - \sqrt{5})(7x - 2)$

6. zeros: $x = \frac{5 \pm 5i\sqrt{3}}{2}, -5$

factored form: $f(x) = (x + 5)(2x - 5 - 5i\sqrt{3})(2x - 5 + 5i\sqrt{3})$

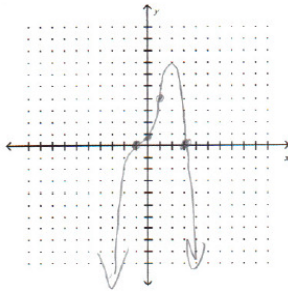
7. zeros: $x = \pm 4, \pm 4i$

factored form: $f(x) = (x + 4)(x - 4)(x + 4i)(x - 4i)$

Chapter 4 Review Answers Non-Calculator

- $x = 0, 5 \text{ m}^3, -1 \text{ m}^2$
 - crosses at $(0, 0)$ and $(5, 0)$
touches at $(-1, 0)$
 - 9 maximum turning points

- down left, down right
 - x-int: $(3, 0), (-1, 0)$
 - y-int: $(0, \frac{3}{4})$
 - answers may vary
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- Max number of zeros: 4
 $\frac{\pm p}{\pm q} = \pm 1, \pm \frac{1}{5}, \pm 2, \pm \frac{2}{5}, \pm 5, \pm 10$

- remaining zeros: $-5i, \frac{1}{4}, -3$

- remaining zeros: $3 - i, -2$

- D: $(-\infty, -3)(-3, 6)(6, \infty)$

7. VA: $x = \frac{-5}{3}$

HA: $y = -1$

OA: none

8. VA: $x = 6$

HA: $y = 0$

OA: None

9. VA: $x = 4$

HA: none

OA: $y = x + 7$

10. VA: none

HA: none

OA: none

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

2. simplified

3. $(-\infty, -5)(-5, 6)(6, \infty)$

4. VA: $x = -5, 6$

5. HA: $y = 0$

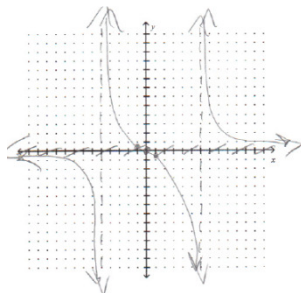
OA: none

6. y-int: $(0, 0)$

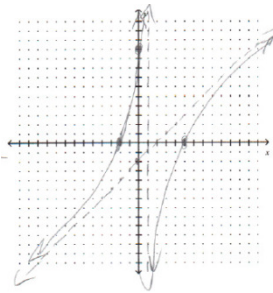
x-int: $(0, 0)$

7. answers may vary

8.



12. 1. $f(x) = \frac{(x-5)(x+2)}{(x-1)}$
 2. simplified
 3. $(-\infty, 1)(1, \infty)$
 4. VA: $x = 1$
 5. HA: none
 OA: $y = x - 2$
 6. y-int: $(0, 10)$
 x-int: $(5, 0)(-2, 0)$
 7. answers may vary
 8.



13. 1. $f(x) = \frac{(x+7)(x-4)}{(x-4)}$
 2. $f(x) = x + 7, x \neq 4$
 3. $(-\infty, 4)(4, \infty)$
 4. VA: none
 5. HA: none
 OA: none
 6. y-int: $(0, 7)$
 x-int: $(-7, 0)$
 7. answers may vary
 8.

