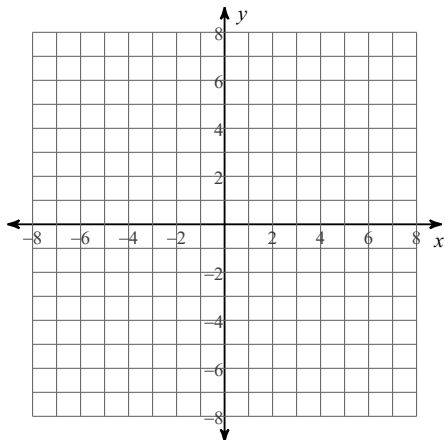


Practice Chapter 2 Test - Part 1

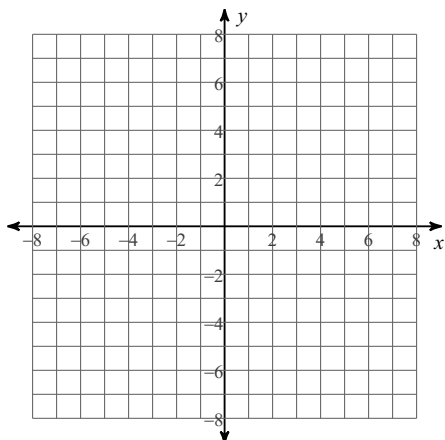
Date _____ Period _____

For each function, determine the real zeros and state the multiplicity of any repeated zeros and sketch the graph.

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

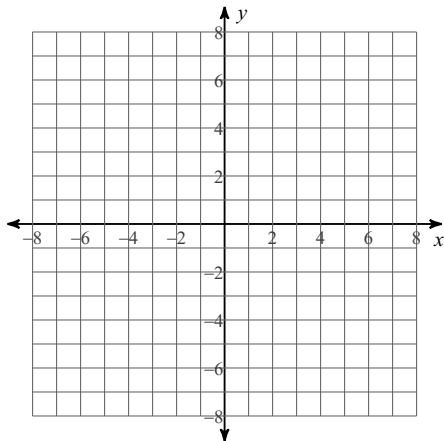


2) $f(x) = -2x^4 - x^3 + x^2$

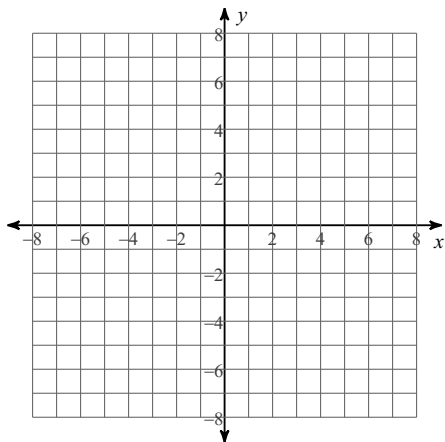


For each function, identify the holes, intercepts, and any asymptotes. Then sketch the graph.

$$3) f(x) = \frac{-2x^3 - 8x^2}{x^3 + 7x^2 + 12x}$$



$$4) f(x) = \frac{x^2 - 3x + 2}{-4x + 16}$$



Divide. Write your answer in fraction form.

$$5) (2x^5 + 4x^4 - 10x^3 + 29x^2 + 14x - 23) \div (x + 4)$$

$$6) (10x^3 + 12x^2 - 18x) \div (5x^2 - 4x - 1)$$

Evaluate $f(x)$ at k .

$$7) f(x) = x^4 - 6x^3 + 8x^2 + 4x - 4$$

$$k = 1$$

Determine whether the upper and lower bound tests indicate k is an upper bound, a lower bound, or neither bound on the real zeros of $f(x)$.

8) $f(x) = 4x^4 - 2x^3 + 4x^2 + 2x - 8$
 $k = 2$

Write a polynomial function of least degree with integral coefficients that has the given zeros.

9) 3, 1, -5, -3

State the possible rational zeros for each function. DO NOT SOLVE.

10) $f(x) = 5x^5 - 15x^4 + 22x^3 - 66x^2 - 15x + 45$

Find all zeros.

11) $f(x) = 3x^3 + 5x^2 + x - 1$

12) $f(x) = 5x^4 - 4x^2 - 1$

Factor each to linear factors.

13) $f(x) = 5x^5 + 10x^4 + 46x^3 + 92x^2 + 48x + 96$

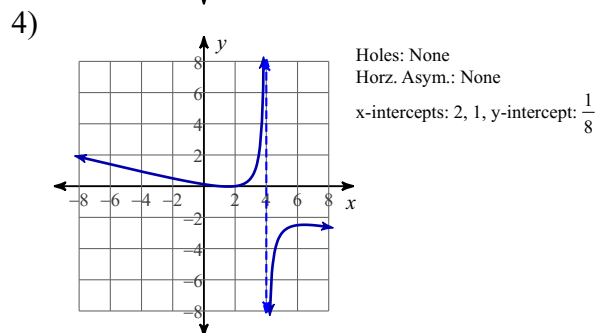
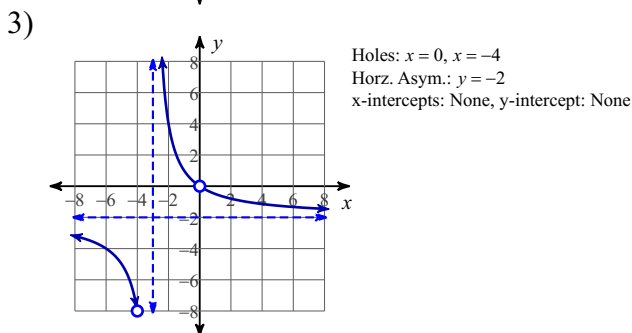
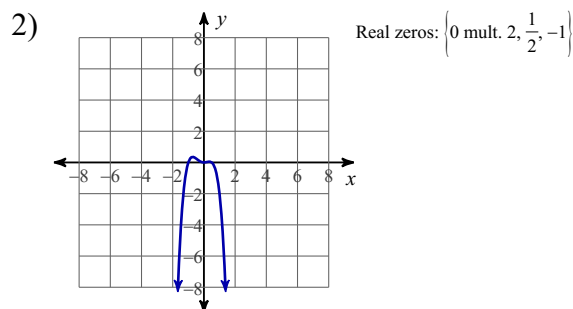
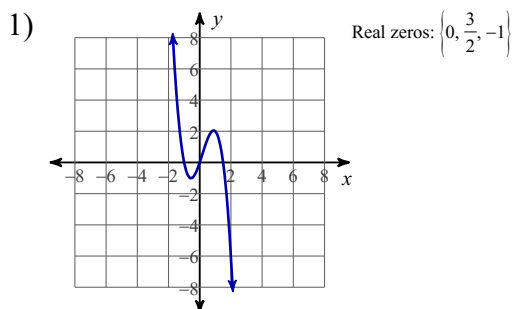
Solve each inequality.

14) $\frac{-x + 29}{x + 1} \leq 5$

Find all zeros.

15) $f(x) = 2x^3 + 7x^2 - 14x + 5$

Answers to Practice Chapter 2 Test - Part 1 (ID: 1)



5) $2x^4 - 4x^3 + 6x^2 + 5x - 6 + \frac{1}{x+4}$

7) 3

8) Upper bound

10) $\pm 1, \pm 3, \pm 5, \pm 9, \pm 15, \pm 45, \pm \frac{1}{5}, \pm \frac{3}{5}, \pm \frac{9}{5}$

6) $2x + 4 + \frac{4}{5x^2 - 4x - 1}$

9) $f(x) = x^4 + 4x^3 - 14x^2 - 36x + 45$

11) $\left\{-1 \text{ mult. } 2, \frac{1}{3}\right\}$

12) $\left\{1, -1, \frac{i\sqrt{5}}{5}, -\frac{i\sqrt{5}}{5}\right\}$

13) $f(x) = 5(x+2)(x-2i\sqrt{2})(x+2i\sqrt{2})\left(x-\frac{i\sqrt{30}}{5}\right)\left(x+\frac{i\sqrt{30}}{5}\right)$

14) $(-\infty, -1) \cup [4, \infty)$

15) $\left\{\frac{1}{2}, -5, 1\right\}$