

Practice Test Chapter 1

Date _____ Period _____

Write the slope intercept form of the equation of the line described.

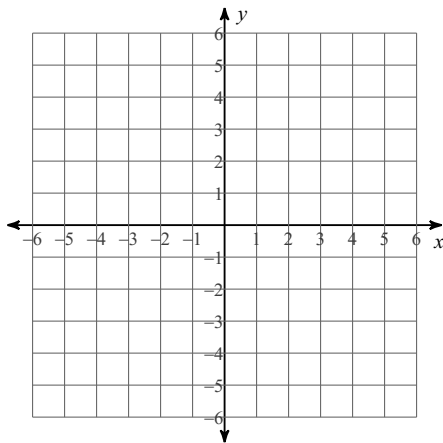
1) through: $(2, -3)$, perp. to $y = \frac{2}{3}x - 5$

For each problem, find the average rate of change of the function over the given interval.

2) $f(x) = \frac{1}{x-2}$; $[-4, -\frac{7}{2}]$

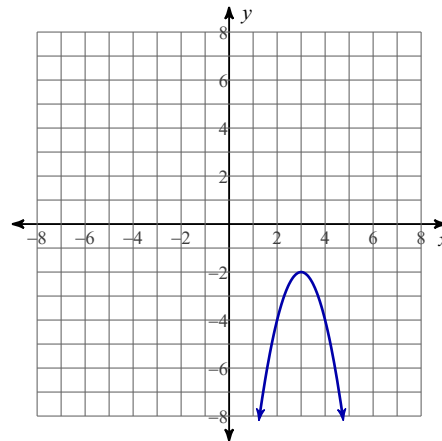
Sketch the graph of each line.

3) $y + 3x + 2 = 0$



Approximate the intervals where each function is increasing and decreasing.

4)



Describe the transformations necessary to transform the graph of $f(x)$ into that of $g(x)$.

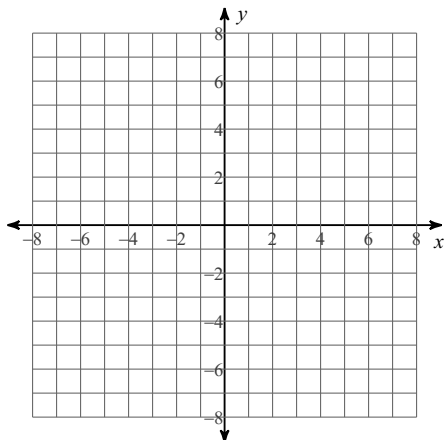
5) $f(x) = x^3$
 $g(x) = -(3(x-1))^3 + 3$

Transform the given function $f(x)$ as described and write the resulting function as an equation.

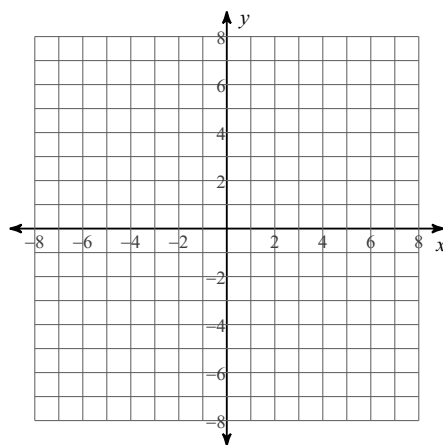
6) $f(x) = |x|$
 compress vertically by a factor of 3
 reflect across the x-axis
 translate left 1 unit
 translate up 3 units

Sketch the graph of each function.

$$7) g(x) = \begin{cases} -4, & x < -3 \\ 4^x + 1, & x \geq -3 \end{cases}$$



$$8) g(x) = \begin{cases} -4 + \sqrt{x}, & x \leq 3 \\ 4 + \sqrt{x}, & x > 3 \end{cases}$$



Perform the indicated operation.

$$9) \begin{aligned} g(n) &= n^2 - 3 \\ h(n) &= 4n + 2 \\ \text{Find } (g \cdot h)(n) \end{aligned}$$

$$10) \begin{aligned} g(x) &= x^2 - 3 \\ h(x) &= -3x + 2 \\ \text{Find } (2g + 5h)(x) \end{aligned}$$

$$11) \begin{aligned} g(x) &= -4x - 5 \\ h(x) &= x^2 - 5x \\ \text{Find } (g \circ h)(7) \end{aligned}$$

$$12) \begin{aligned} g(t) &= t^2 + 4t \\ h(t) &= 3t + 4 \\ \text{Find } g(h(-4t)) \end{aligned}$$

Find the inverse of each function.

$$13) f(x) = \frac{1}{x-2}$$

$$14) f(x) = -\frac{1}{x}$$

15) The function y is inversely proportional to x . If $y=4$ and $x=2$, then find x when $y=16$.

16) Determine if the function is even, odd or neither.

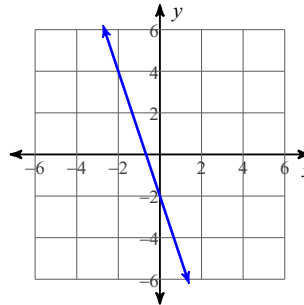
$$f(x) = \sqrt{x^4 + 3}$$

Answers to Practice Test Chapter 1 (ID: 1)

1) $y = -\frac{3}{2}x$

2) $-\frac{1}{33}$

3)

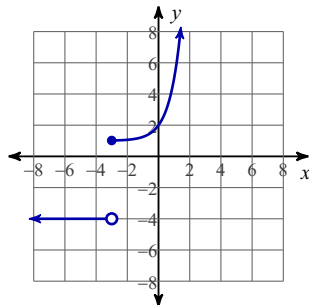


4) Increasing: $(-\infty, 3)$ Decreasing: $(3, \infty)$

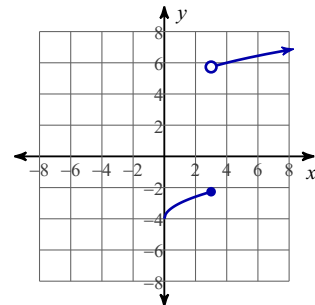
5) compress horizontally by a factor of 3
reflect across the x-axis
translate right 1 unit
translate up 3 units

6) $g(x) = -\frac{1}{3} \cdot |x + 1| + 3$

7)



8)



9) $4n^3 + 2n^2 - 12n - 6$

10) $2x^2 - 15x + 4$

11) -61

12) $144t^2 - 144t + 32$

13) $f^{-1}(x) = \frac{1}{x} + 2$

14) $f^{-1}(x) = -\frac{1}{x}$

15) $1/2$

16) even