

# Unit 12 Big Quiz Review

Name: Key

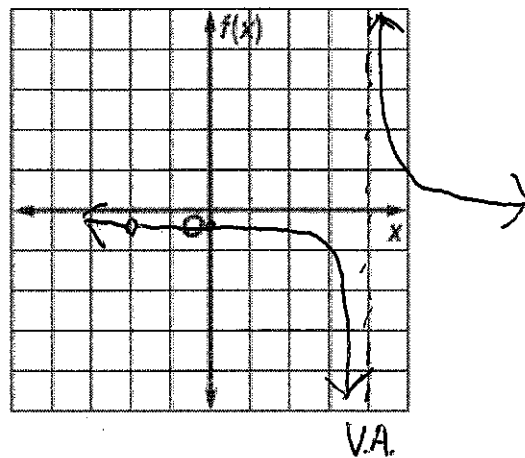
Determine the equation of any vertical asymptotes and the values of x for any holes in the graph. Then graph the function.

Vertical asymptote(s):  $x = 4$

Hole(s):  $x = -2$

$$1. f(x) = \frac{x+2}{x^2 - 2x - 8} = \frac{\cancel{x+2}}{\cancel{(x+2)}(x-4)} = \frac{x+2}{(x-4)(x+2)}$$

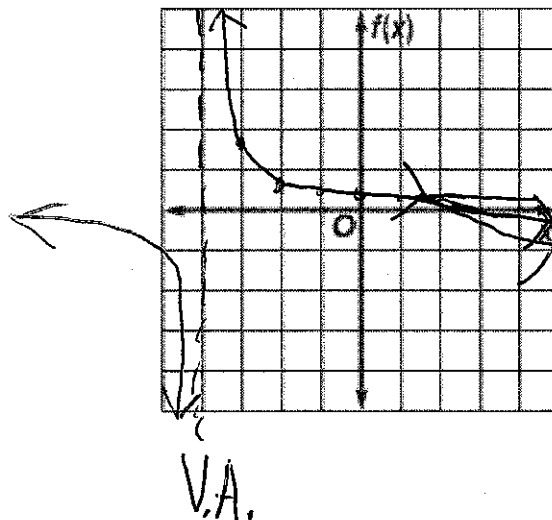
x	y
-3	-1.125
-2	hole
-1	.2
0	-.25
1	-.33
2	-.5
3	-.75



Vertical asymptote(s):  $x = -4$

Hole(s): none

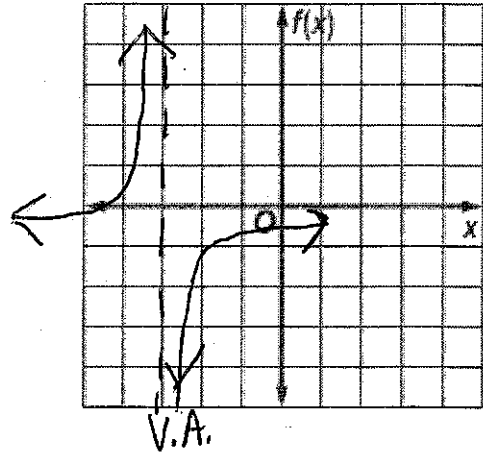
$$2. f(x) = \frac{x-4}{-4x-16} = \frac{x-4}{-4(x+4)}$$



Vertical asymptote(s):  $x = -3$

Hole(s): none

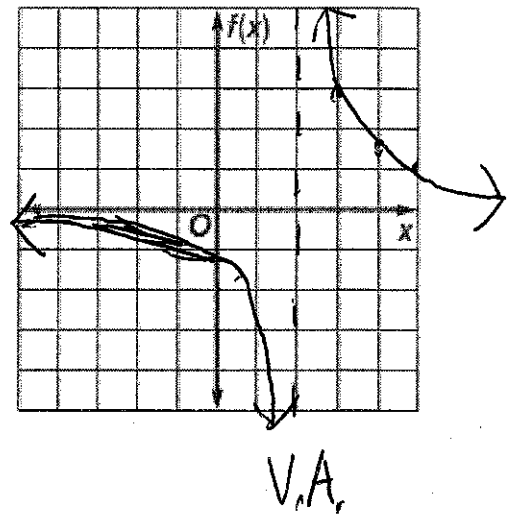
3.  $f(x) = \frac{x+4}{-2x-6}$   $f(x) = \frac{x+4}{-2(x+3)}$



Vertical asymptote(s):  $x = 2$

Hole(s): none

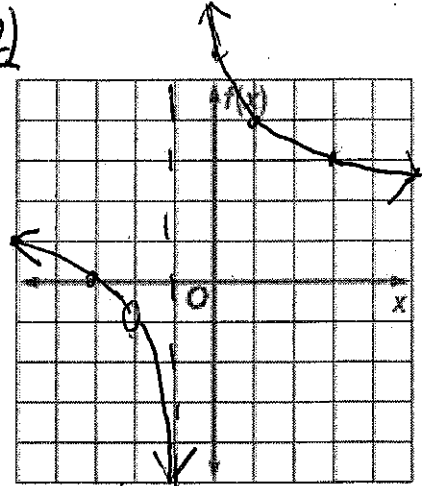
4.  $f(x) = \frac{3}{x-2}$



Vertical asymptote(s):  $x = -1$

Hole(s):  $x = -2$

$$5. f(x) = \frac{2x^2 + 10x + 12}{x^2 + 3x + 2} = \frac{2(x^2 + 5x + 6)}{(x+2)(x+1)} = \frac{2(x+3)(x+2)}{(x+2)(x+1)}$$

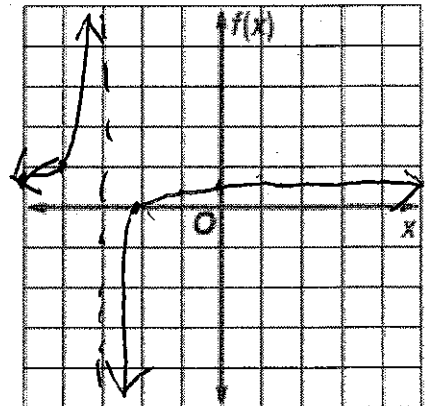


V.A.

Vertical asymptote(s):  $x = -3$

Hole(s): none

$$6. f(x) = \frac{x+2}{2x+6} \quad f(x) = \frac{x+2}{2(x+3)}$$



V.A.

State whether the each equation represents *direct*, *joint*, or *inverse* variation. Then name the constant of variation.

7.  $f = \frac{7}{h}$  is inverse

~~A is the~~

constant of variation is 7

8.  $xy = 15$

~~direct~~  
~~joint~~

inverse  
constant is 15

9.  $r = -2ab$

~~direct~~ joint

constant of variation

is -2

Find the value of each.

10. If y varies directly as x and y = 25 when x = 6, find y when x = 13.

$$y = Kx \quad 25 = K \cdot 6 \quad K = 4.1\bar{6}$$

$$y = 13 \cdot 4.1\bar{6}$$

$$y = 54.167$$

11. If y varies jointly as x and z and y = 16 when x = 2 and z = 4, find y when x = 4 and z = 5.

$$y = Kxz \quad 16 = K \cdot 2 \cdot 4$$

$$K = 2$$

$$y = 2 \cdot 4 \cdot 5$$

$$y = 40$$

12. If y varies inversely as x and y = 7 when x = 21, find x when y = 9.

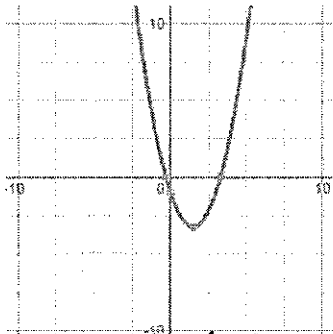
$$7 = \frac{K}{21} \quad K = 147$$

$$y = \frac{K}{x}$$

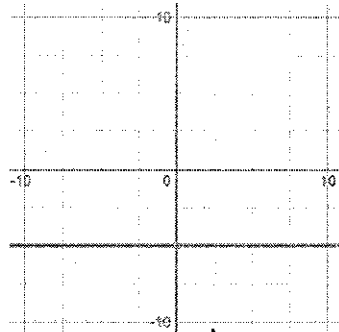
$$9 = \frac{147}{x}$$

$$x = 16.33$$

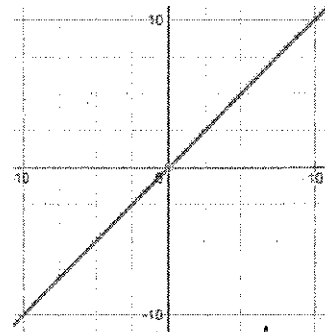
Identify the function represented by each graph.



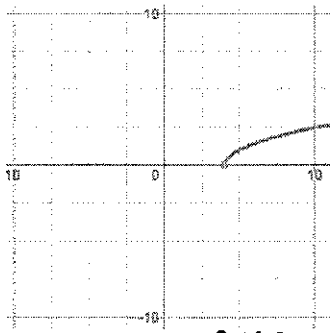
quadratic



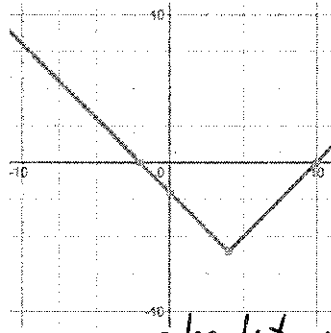
constant



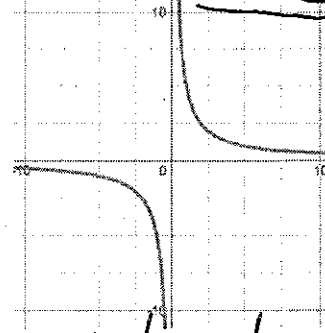
~~rational~~ if not  
identity if not



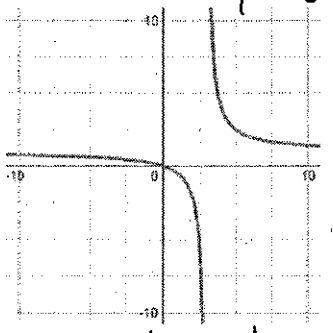
square root



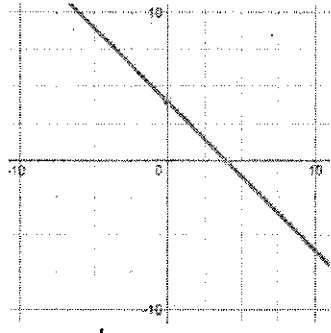
absolute value



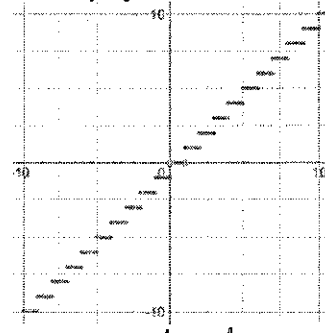
rational



rational



direct (linear)



greatest integer