Advanced Algebra
Unit 2 Review

Name:_____
Hour:_____

1. The equation M = 4.4n, relates the number of quarters, n, to its mass, M, in grams. What is the independent variable? 1._____

A). The mass of the quarters.
B). The value of the quarters.
C). The number of quarters.
D). Each quarter weighs 4.4 grams.

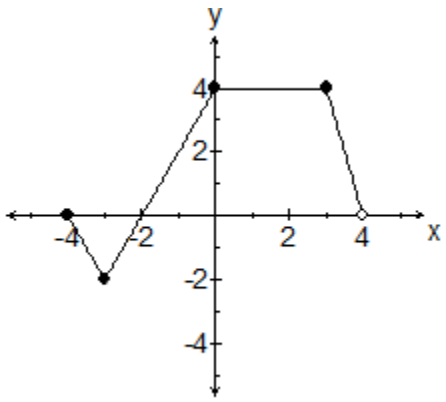
2. What is the domain of the following relation? 2._____

A). (– 4, 4)

B). [– 4, 4)

C). (– 4, 4]

D). [– 4, 4]



3 After examining the table of values below, which statement is a false statement?

x	-2	0	1	2	4	5
y	8	6	5	4	1	0

[1] The domain is {-2, 0, 1, 2, 4, 5}.

[2] The average rate of change is -2.

[3] The range is {0, 1, 4, 5, 6, 8}.

[4] This relation is a function.

4. Let $f(x) = 2x^2 - 4x$ and $g(x) = \sqrt{x}$. Determine $f(g(4))$. 4._____

a. 4

c. 32

b. 0

d. 18

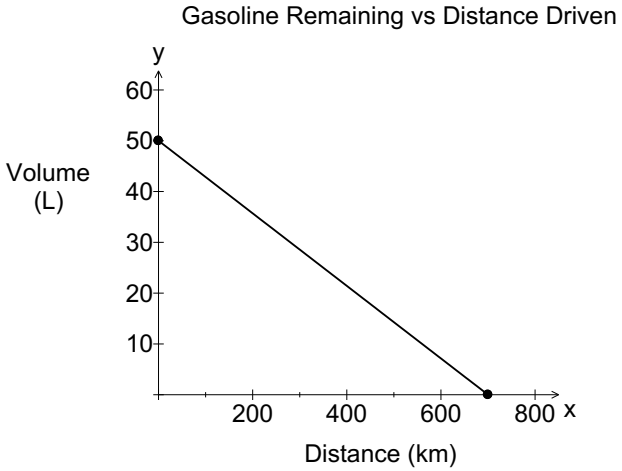
5. The graph below shows the relationship between the amount of gasoline remaining in a 50 L tank and the distance driven. What does the **x-intercept** represent in this situation? 5._____

A). Fuel capacity of the gasoline tank.

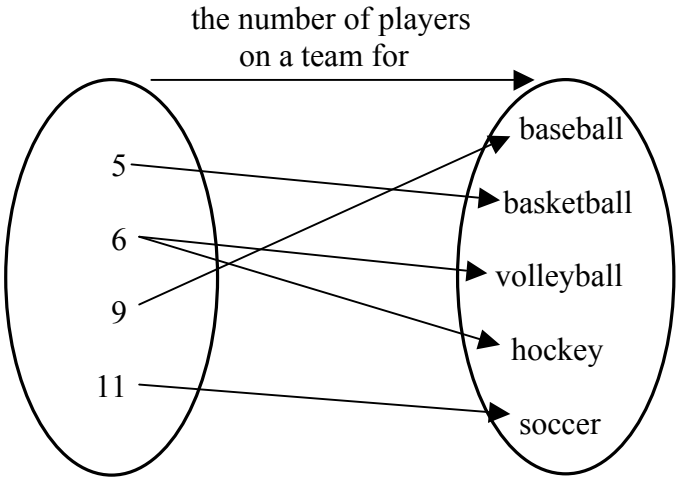
B). Total distance travelled during a long trip.

C). Total distance driven until the car is out of gas.

D). Number of kilometers driven per liter of gasoline.



6. Is this relation a function? Explain why or why not.



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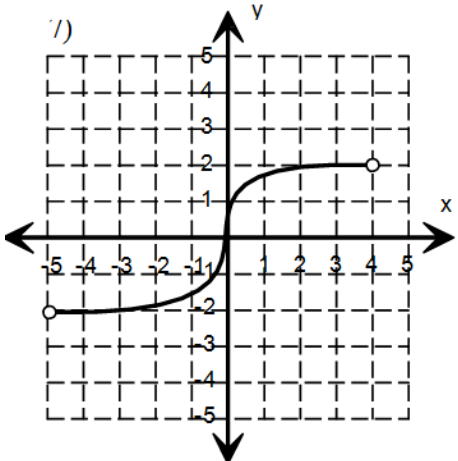
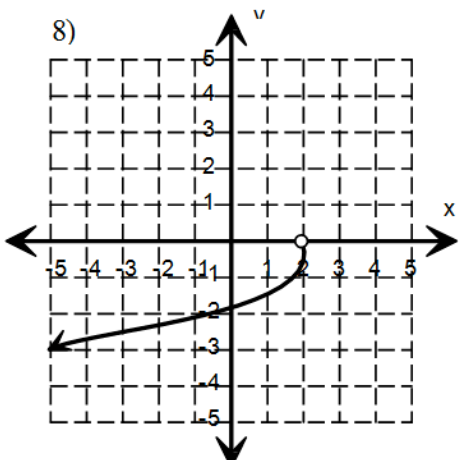


Domain : _____

Range : _____

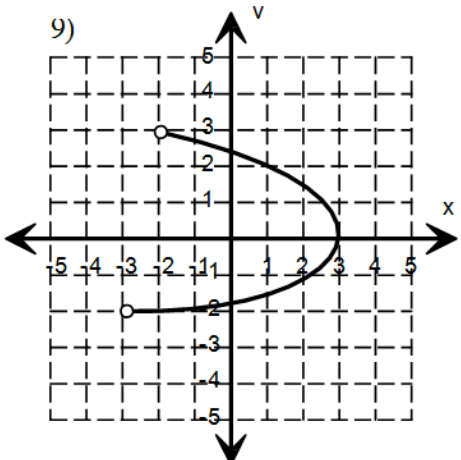
8)



Domain : _____

Range : _____

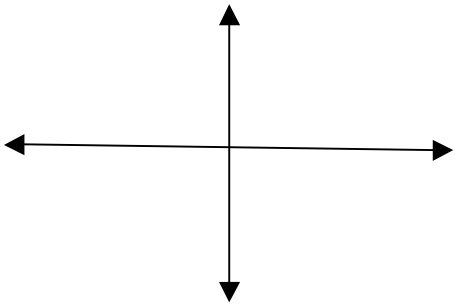
9)



Domain : _____

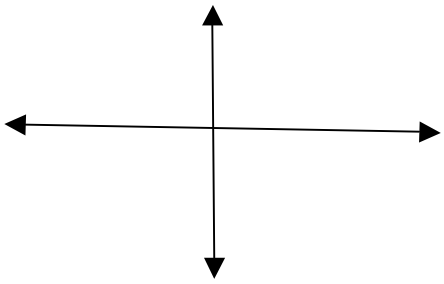
Range : _____

10. Draw a graph that is not a function. (Explain why it is not a function)



11. Draw a graph that is a function with the following domain and range.

Domain: All real numbers Range: $y < 5$



12. let $f(x) = -x + 9$, $g(x) = -5x + 2$, and $h(x) = x^2 - 5x + 3$ Perform the indicated operation.

a. f(-4) = _____ b. h(-4) = _____

c. h(-4w) = _____ d. g(a + 3) =_____

e. $\frac{f(x)}{g(x)}$ = _____ Domain:_____

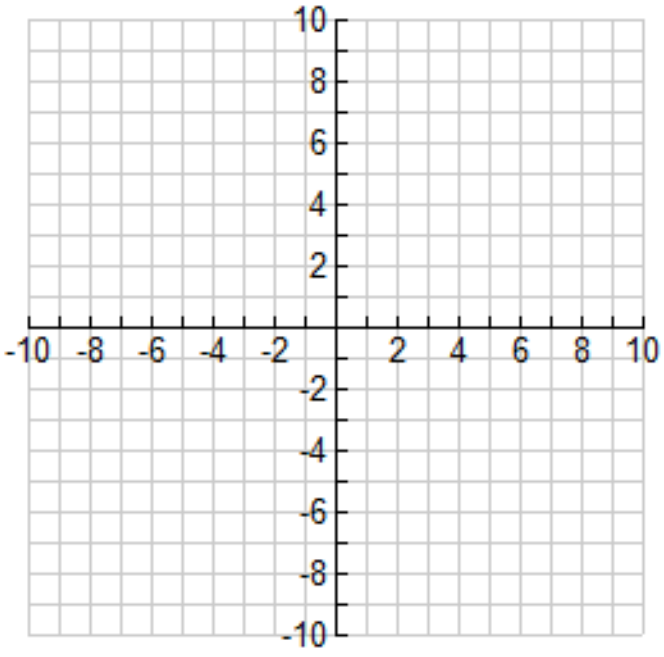
f. $\frac{g(x)}{f(x)}$ = _____ Domain:_____

g. g(h(2)) = _____ h. h(f(2))=_____

i. g(f(x))=_____ j. g(g(x))=_____

13 . Graph the piecewise function

$$f(x)=\begin{cases}4x-5, & x\geq 2\\ -x, & -1<x<2\\ 1, & x\leq -1\end{cases}$$



Evaluate the following:

f(1) = _____

f(20) = _____

f(-1000) =_____

If f(x) = 7 then x = _____

14. Perform the indicated operation and simplify.

a. $(w^3+4w^2-10w+7)-(-6w^3+5w-10)$

b. $(2x^4+9x-7)+(x^4+6x+5)$

c. $(x-2)(x^2-3x+4)$

d. $(3x^2+2)^2$

15. Write an equation for the parent function y = x^2 being translated 4 units left and being reflected over the x-axis.

In 16 and 17:
a) identify the parent function
b) describe any transformations (reflection, scale, translation)
c) write the rule

16. $y = 2|x| - 5$

a) _____

b) _____

_____

c) _____

17. $y = -(x-2)^2 + 10$

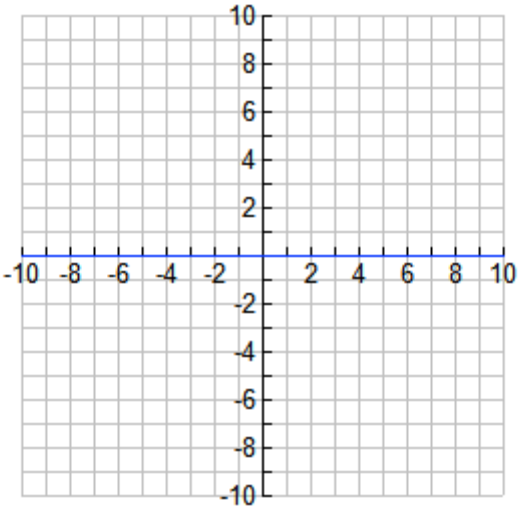
a) _____

b) _____

_____

c) _____

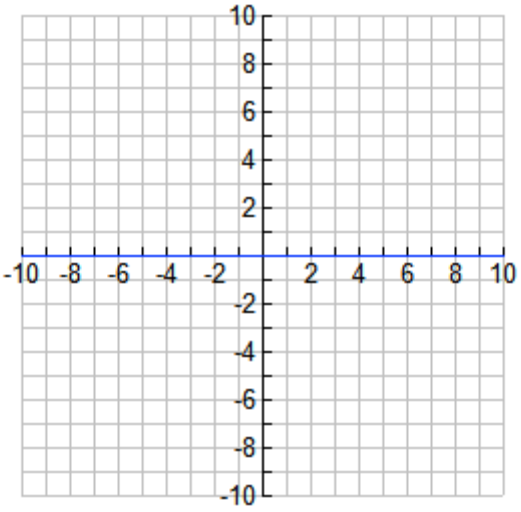
18. Graph $y = -\frac{4}{3}|x-4|+1$



Domain:_____

Range:_____

19. Graph $y = 2\sqrt{x+1} - 3$



Domain:_____

Range:_____