ANSWERS

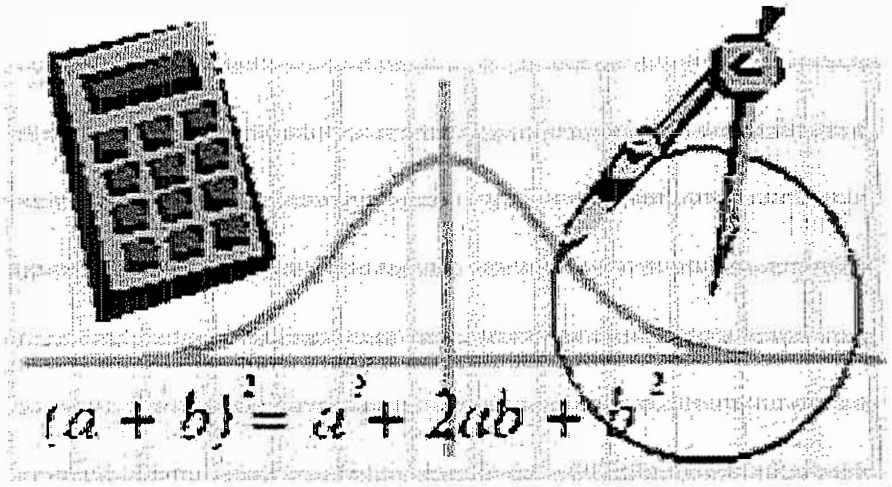
Downingtown High School

East/West

Keystone Algebra 1 Review

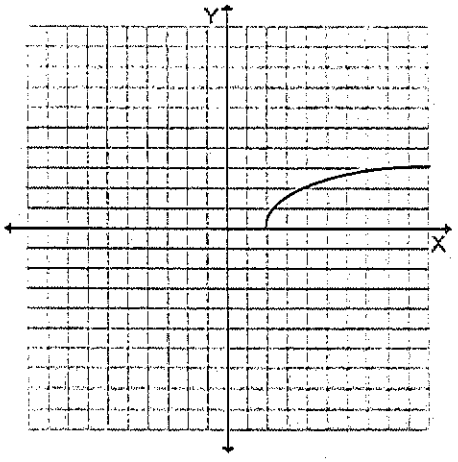
Module 2

Functions



1. Find the domain of the radical function graphed below.

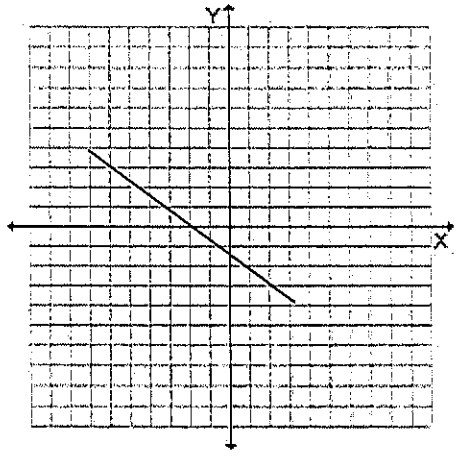
A. $x \geq 0$ B. all real numbers C. $x > 1$ D. $x \geq 2$



Domain is all possible "x" values.
This function starts at where $x=2$ & continues to the right infinitely, so $x \geq 2$

2. Which equation is graphed below?

A. $4x+3y=2$ B. $4x+3y=-2$ C. $3x-4y=-5$ D. $3x+4y=-5$



y-intercept is hard to determine, so put all in $y=mx+b$ form.

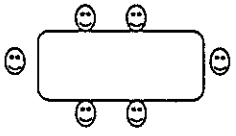
A. $4x+3y=2$
$3y=-4x+2$
$y=-\frac{4}{3}x+\frac{2}{3}$

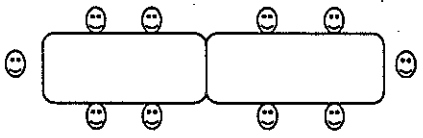
B. $4x+3y=-2$
$3y=-4x-2$
$y=-\frac{4}{3}x-\frac{2}{3}$

C. $3x-4y=-5$
$-4y=-3x-5$
$y=\frac{3}{4}x+\frac{5}{4}$

D. $3x+4y=-5$
$4y=-3x-5$
$y=-\frac{3}{4}x-\frac{5}{4}$

3. Sylvester's Pizzeria has a party room to accommodate pizza parties. They have rectangular tables that can be placed together end-to-end to sit large groups of people together. Some sample seating arrangements are shown below.





1 table = 6
2 tables = 10

Which of the following expressions can be used to determine the number of people who can sit as a group if t tables are joined together?

A. $4(t+1)$ B. $3(t+1)$ C. $2(2t-1)$ D. $2(2t+1)$

A. $4(1+1)=8$

B. $3(1+1)=6$
$3(2+1)=9$

C. $2(2\cdot1-1)$
$2(2-1)$
$2\cdot1=2$

D. $2(2\cdot1+1)$
$2(2+1)=6$
$2(3)=6$
$2(2\cdot2+1)$
$2(4+1)$
$2(5)=10$ ✓

4. Which of the following relations is a function?

A. $(1,4),(-4,6),(1,3),(-8,2)$

B. $(1,4),(-4,2),(6,1),(-8,2)$

C. $(1,0),(-4,3),(6,1),(-4,5)$

D. $(6,1),(-4,4),(1,1),(6,2)$

a set of ordered pairs is a function if no x-values repeat

$y=mx+b$

$-5=\frac{1}{3}(-4)+b$

$-5=\frac{-4}{3}+b$

$+\frac{4}{3}\quad+\frac{4}{3}$

$\frac{-15}{3}+\frac{4}{3}=\frac{-11}{3}=b$

$y=\frac{1}{3}x-\frac{11}{3}$

5. A line has a slope of $\frac{1}{3}$ and passes through the point $(-4,-5)$. What is the equation of the line?

A. $x+3y=11$

B. $y=\frac{1}{3}(x+4)$

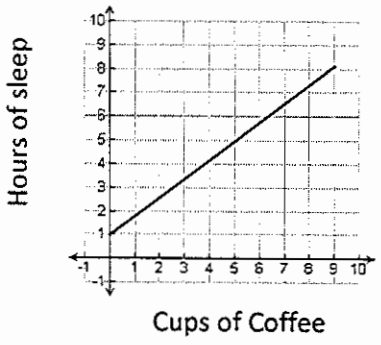
C. $x+3y=9$

D. $y=\frac{1}{3}x-\frac{11}{3}$

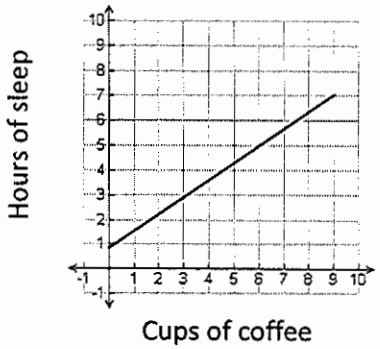
6. A university completed a study to determine what effect drinking coffee had on hours of sleep. After studying 1000 people, they concluded that, for every three cups of coffee, a person slept two hours less.

Which of the following graphs shows this linear relationship?

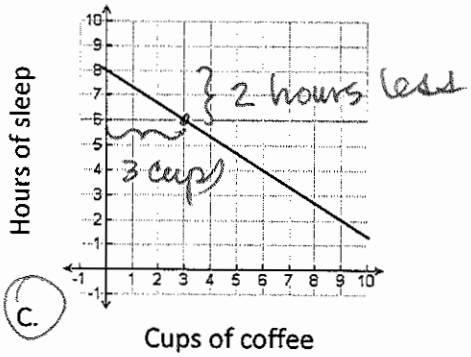
A.



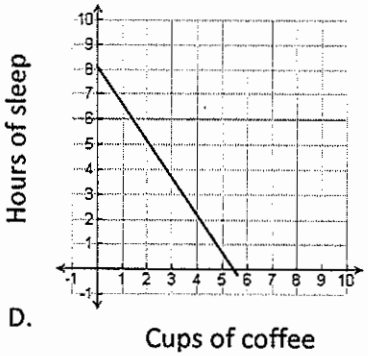
B.



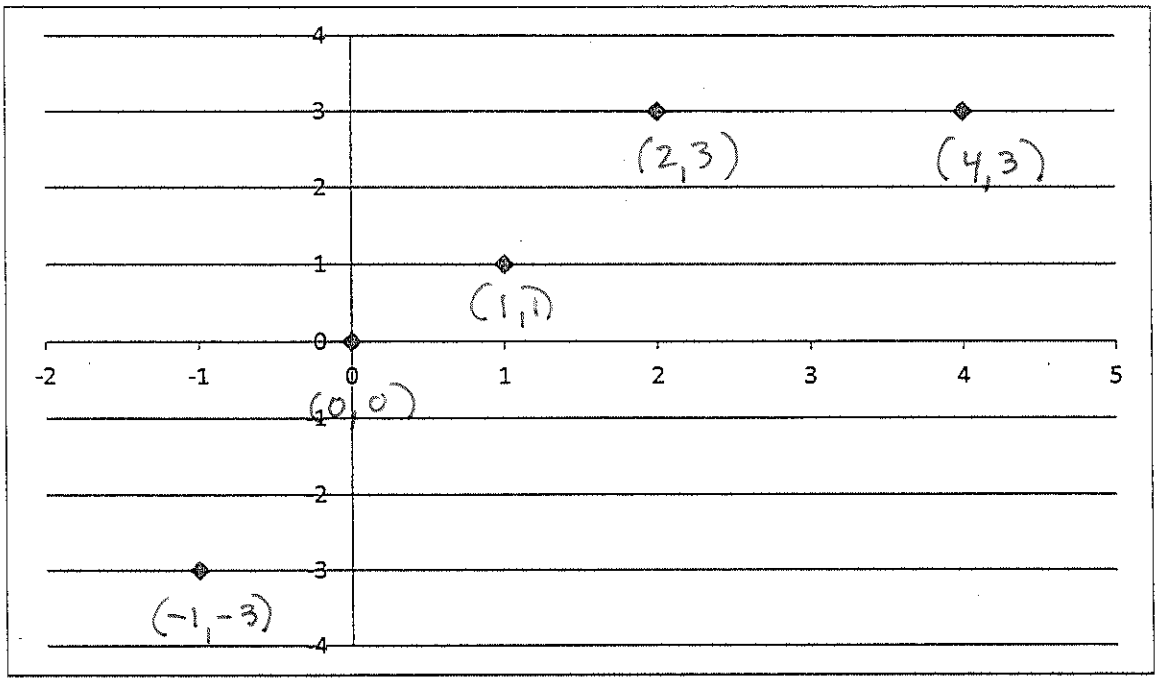
C.



D.



7. What is the domain of the relation plotted on the graph below? Domain = x values



A. $\{-3,0,1,3\}$

B. {all real numbers between and including -1 and 4}

C. {all real numbers between and including -3 and 3}

D. $\{-1,0,1,2,4\}$

8. A company noticed a linear relationship between the price of a luggage set and the number of luggage sets sold. At \$100, the company sold 1,000 sets. When the company raised the price to \$120, they sold 800 sets. Which equation relates the price of the luggage sets to the total number of luggage sets sold?

A. $y-100=10(x-1000)$

B. $y-1000=10(x-100)$

C. $y-100=-10(x-1000)$

D. $y-1000=-10(x-100)$

$y = mx+b$

~~$1000 = 100x+b$~~

~~$800 = 120x+b$~~

$(100, 1000)$

$(120, 800)$

use slope formula

$m = \frac{1000-800}{100-120} = \frac{200}{-20} = -10$

$y-1000 = -10(x-100)$

$y-1000 = -10x+1000$

9. According to the table below, what is the range of the data?

Input	output
20	26
21	27
22	28
23	29
24	30

the range is the y-values of an ordered pair (or the output)

A. 27, 29, 31, 33, 35
B. 20, 21, 22, 23, 24
C. 26, 27, 28, 29, 30
D. 20, 19, 18, 17, 16

10. The first five terms of a sequence are given below:

15, 24, 33, 52, 51, ...

Determine which of the following formulas gives the n^{th} term of this sequence.

A. $7+8n$
B. $24-9n$
C. $23-8n$
D. $6+9n$

- figure out the difference between the numbers

15 24 33 42 51, ...
+9 +9 +9 +9

- then figure out # before the first #, so 15 - 9 = 6

so: $6 + 9n$
↑ ↑
1st # difference