

MUST SHOW STEPS WHENEVER APPROPRIATE

Write a formula for the following.

1) Determine the number of minutes y in x days.

$$y = (1440x \text{ minutes})$$

$$x \text{ days} * \frac{24 \text{ HRS}}{1 \text{ Day}} * \frac{60 \text{ min}}{1 \text{ HR}} = 1440x \text{ min}$$

2) Convert x ounces to y pounds.

$$y = x \text{ ounces} * \frac{1 \text{ pound}}{16 \text{ ounces}} = \frac{x}{16} \text{ pounds}$$

Evaluate the formula at the given value of the variable.

3) $k = |2r + 3|$, $r = -6$

$$k = |2(-6) + 3| = |-12 + 3| = |-9| = 9$$

4) $k = 3r^2 - \frac{1}{4}$, $r = 5$

$$k = 3(5)^2 - \frac{1}{4} = 75 - \frac{1}{4} = 74\frac{3}{4}$$

Select the formula that best models the data in the table.

5)

x	-7	-6	-5	-4	-3
y	-4	-3	-2	-1	0

A) $y = 2x + 1$

B) $y = x - 2$

C) $y = x + 3$

D) $y = 2x$

6)

x	4	16	36	64	100
y	1	2	3	4	5

A) $y = 4x^2$

B) $y = \frac{1}{2}\sqrt{x}$

C) $y = 2x^2$

D) $y = \frac{1}{4}\sqrt{x}$

Find a value for a so that the equation models the data.

7) $y = x - a$

x	2	3	4	5	6
y	-2	-1	0	1	2

let $x = 2$ and $y = -2$

we get $-2 = 2 - a \Rightarrow a = 4$

$$\begin{aligned} -2 &= 2 - a \\ -2 - 2 &= -a \\ -4 &= -a \\ 4 &= a \end{aligned}$$

8) $y = a\sqrt{x}$

x	36	49	64	81	100
y	6	7	8	9	10

let $x = 36$ and $y = 6$ in the equation $y = a\sqrt{x}$

we get $6 = a\sqrt{36} \Rightarrow a = \frac{6}{6} = 1$

then $a = 1$

Complete the table using the formula.

9) $y = (-2x)^3$

x	3	4	5	6	7
y					

-216

$\text{let } y_1 = (-2x)^3$

x	3	4	5	6	7
y	-216	-512	-1000	-1728	-2744

10) $y = \sqrt{x-3}$

x	3	4	7	12	19
y	0	1	2	3	4

$\text{let } y_1 = \sqrt{x-3}$ and look at table of values on your calculator

Solve.

- 11) For a certain species of bird, its weight W in kilograms is related to its length L in meters of its wing span, as given by the formula $W = 1.4L^2$. If a bird has a wing span of 6 meter, estimate its weight.

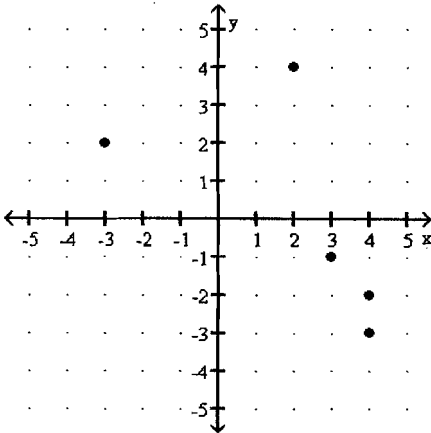
$$W = 1.4(6)^2 = 50.4 \text{ Kg}$$

- 12) Find the length of a side s of a cube with a volume of 216 cubic inches.

Volume of cube = s^3
 $216 = s^3$
 then $s = \sqrt[3]{216} = 6$

Express the relation S as a set of ordered pairs.

13)



$(-3, 2); (2, 4); (3, -1); (4, -2); (4, -3)$

14)

x	-3	-2	-1	0	1
y	-1	1	0	1	1

$(-3, -1) (-2, 1) (-1, 0) (0, 1) (1, 1)$

Identify the domain and range of the relation.

15) $\{(4, -1), (12, -8), (10, 2), (10, -2)\}$

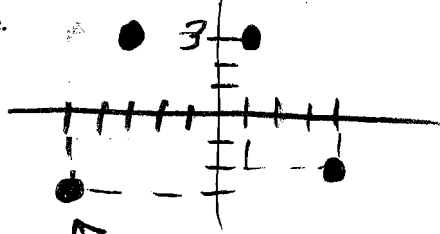
Domain = $\{4, 12, 10\}$

Range = $\{-1, -8, 2, -2\}$

Plot the points in the table in the xy-plane.

16)

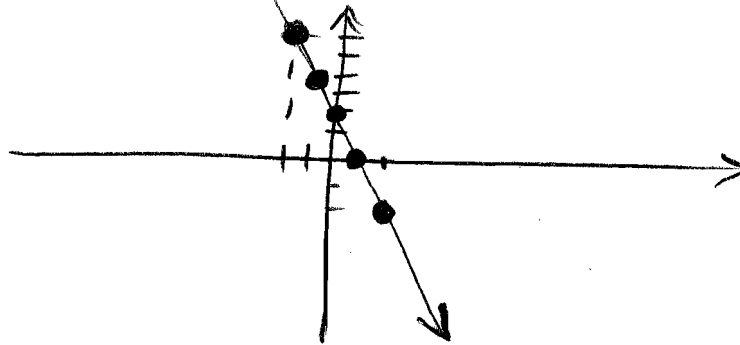
x	1	-5	-3	4
y	3	-3	3	-2



Evaluate the formula for $x = -2, -1, 0, 1,$ and 2 . Plot the resulting ordered pairs.

17) $y = -2x + 2$

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



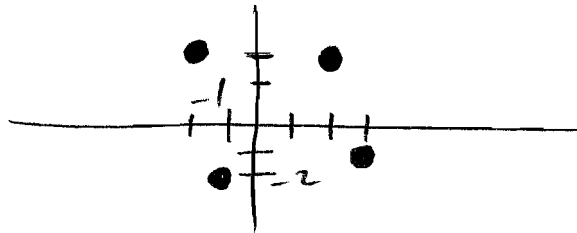
Predict the number of tick marks on the positive x-axis and the positive y-axis.

18) $[-24, 24, 3]$ by $[-30, 30, 3]$

8 tickmarks on positive x-axis
10 tickmarks on positive y-axis

Make a scatterplot of the relation after determining an appropriate viewing rectangle.

19) $\{(-1, -2), (-2, 2), (3, -1), (2, 2)\}$



Make a line graph of the data given in the table.

20) Sales of videos y in millions during year x

x	1975	1980	1985	1990
y	30	80	80	100

