

# Solutions

Page 158 #s 1 – 3, 5 – 7, 11, 13, 17

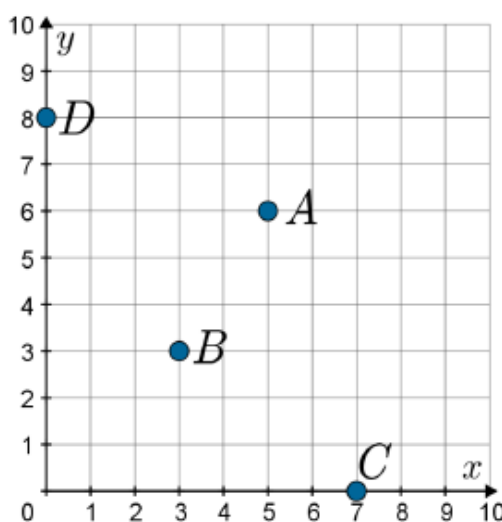
1. State the coordinates of each point in the diagram below.

$A(5,6)$

$B(3,3)$

$C(7,0)$

$D(0,8)$



Coordinates are in the form of  $(x,y)$

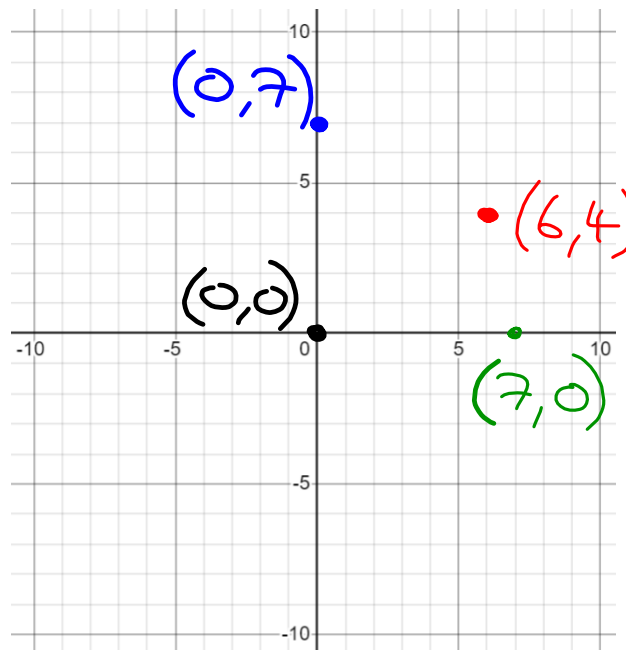
2. Plot each of the following points on a Cartesian plane.

a)  $(6,4)$

b)  $(7,0)$

c)  $(0,7)$

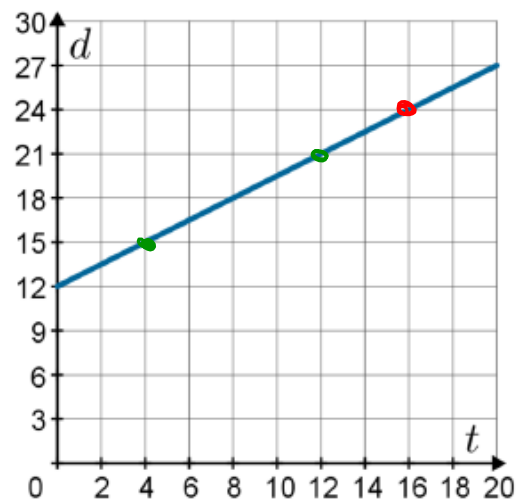
d)  $(0,0)$



3. Consider the graph of a linear relation shown on the right.

a) Explain what is meant when we say, "The point  $(16,24)$  satisfies this relation."

b) State two other points that satisfy this relation.



a)  $(16,24)$  satisfies the relation because the point is on the line

b) Many answers but  $(4,15)$  and  $(12,21)$  both work.

5. The equation  $C = 100 + 20n$  represents the total cost, in dollars, of a rental for  $n$  hours.

- Does  $(2, 140)$  satisfy this equation? Explain.
- Interpret the meaning of the ordered pair  $(5, 200)$  in the context of the given situation.
- Determine the total cost for a 7-hour rental.
- Express the result from part (c) as an ordered pair.

a)  $C = 100 + 20n$   
 Sub in  $n = 2$  and  $C = 140$   
 $\Rightarrow 140 = 100 + 20(2)$   
 $140 = 100 + 40$   
 $140 = 140 \checkmark$   
 Yes it does.

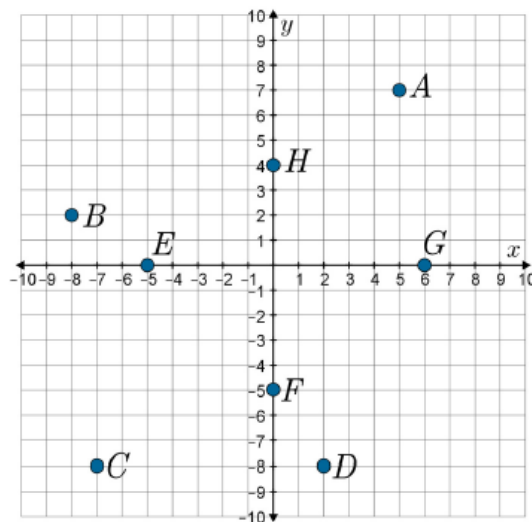
c)  $C = 100 + 20n$   
 $C = 100 + 20(7)$   
 $C = 100 + 140$   
 $C = \$240$

d)  $(7, 240)$

b)  $(5, 200)$  means renting for 5 hours costs \$200

6. State the coordinates of each point in the diagram on the right.

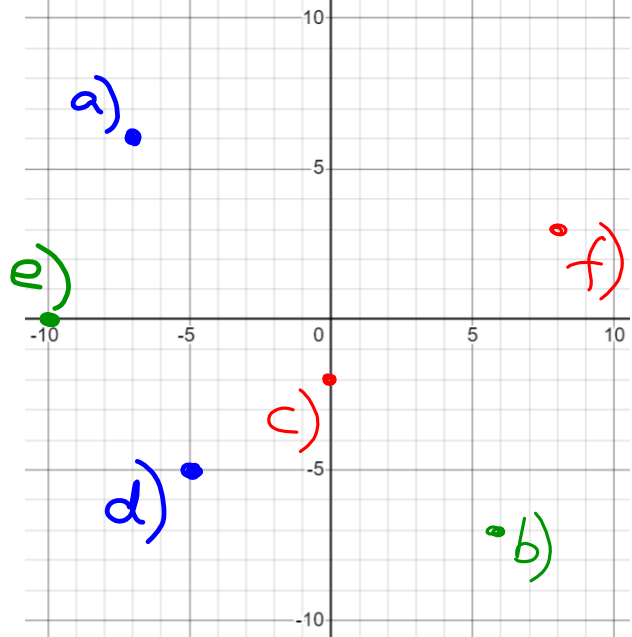
A  $(5, 7)$   
 B  $(-8, 2)$   
 C  $(-7, -8)$   
 D  $(2, -8)$   
 E  $(-5, 0)$   
 F  $(0, -5)$   
 G  $(6, 0)$   
 H  $(0, 4)$



7. Plot each of the following points on a Cartesian plane.

a)  $(-7, 6)$     b)  $(6, -7)$     c)  $(0, -2)$

d)  $(-5, -5)$     e)  $(-10, 0)$     f)  $(8, 3)$



11. If the ordered pair  $(k, 15.3)$  satisfies the equation  $y = 4.5x - 16.2$ , determine the value of  $k$ .

$$x = k \text{ and } y = 15.3$$

$$y = 4.5x - 16.2$$

$$\Rightarrow 15.3 = 4.5k - 16.2$$

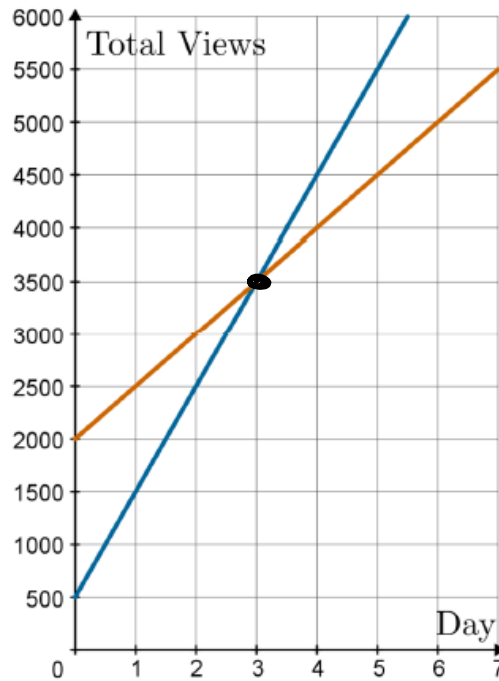
Solve for  $k$

$$\Rightarrow 15.3 + 16.2 = 4.5k - 16.2 + 16.2$$

$$\frac{31.5}{4.5} = \frac{4.5k}{4.5}$$

$$7 = k$$

13. The diagram below shows the total number of views for two different videos over a period of one week.

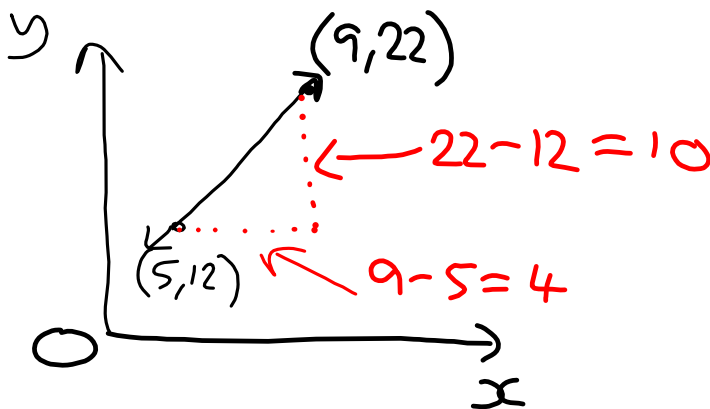


- a) State the coordinates of the point at which the two lines intersect.  
 b) Explain the meaning of the point of intersection.

a) Intersect at the point  $(3, 3500)$

b) It means that after 3 days both videos had been viewed 3500 times.

17. The graph of a linear relation passes through the points  $(5, 12)$  and  $(9, 22)$ . Determine the relation's rate of change.



$$\begin{aligned} \Rightarrow \text{Rate of change} &= \frac{\text{rise}}{\text{run}} \\ &= \frac{10}{4} \\ &= 2.5 \end{aligned}$$