Date: (KEY)
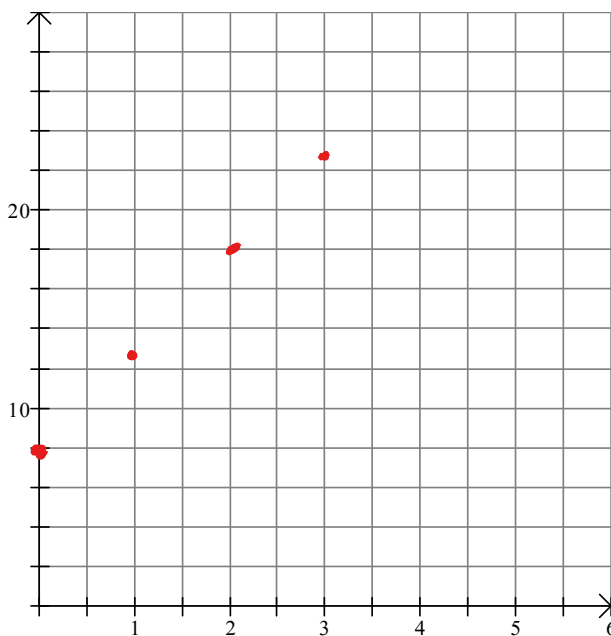
9.1 Notes: Analysing Graphs of Linear Relations

Betty is babysitting for the Jones. ^family They are going to pay her $5 per hour, plus a bonus of $8 because the Jones children are very young and need extra care. She decides to make a table to see how much she will earn.

x Hours worked	y Money earned
0	8
1	13
2	18
3	23

A table of values is: a table showing two related variables. The table is used to find values of one variable by generating values of another.

Note: This table could also be drawn as a horizontal table Convert this to a horizontal table in the space below:

x	0	1	2	3	...
y	8	13	18	23	...

Another way to represent a table of values is to draw a graph.

Why is a line graph more appropriate than a bar graph or a pictograph?
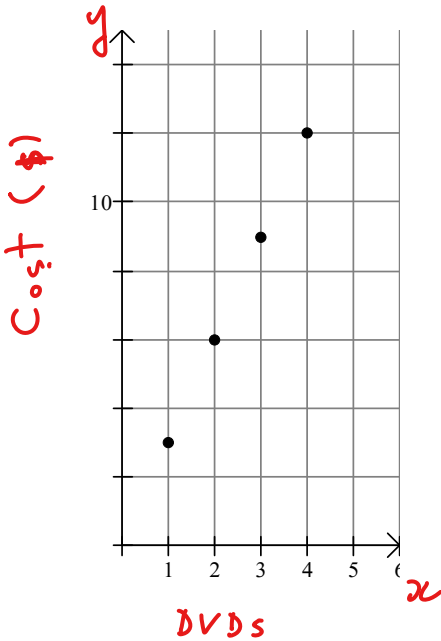
Because both axes are numeric.

What do you notice about the pattern made by the dots on the graph?
^Points

They lie on a straight line.

Often the pattern made by the dots on a graph can be used to make predictions.

The following graph shows how much it costs to buy blank DVD's.

Cost vs # of DVD's

What pattern do you notice?

The points lie on a straight line.

Make a table of values for this graph:

x	1	2	3	4	...	20.5	12
y	3	6	9	12	...	61.5	36

$y = 3x$

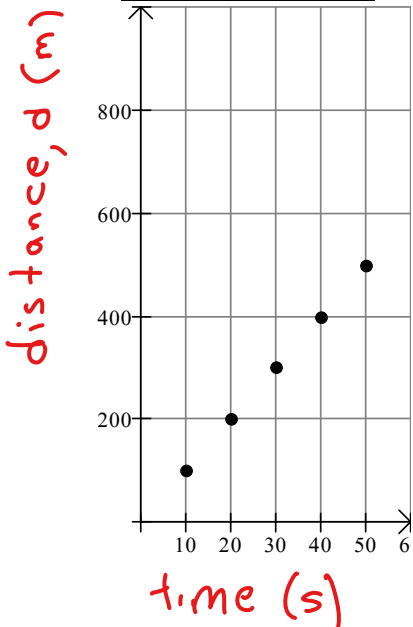If the relationship continues, what might be the cost for 12 DVD's?

$36

Could you make a prediction for how much 20.5 DVD's might cost?

$61.50

→ this is not realistic data ⇒ WHY?

Fred is running a steady pace for an 800m sprint, and his friend Harry is charting his progress:

Distance vs Time

Make a table of values for this graph.

t	10	20	30	40	50	...	80	35
d	100	200	300	400	500	...	800	350

Make a prediction for when he will finish.

80s

Make a prediction for where he will be at 35 seconds.

350m

$d = 10t$
$(800) = 10t$
$\div 10 \qquad \div 10$
$80 = t$