9.1 Notes: Analysing Graphs of Linear Relations

Betty is babysitting for the Jones. 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.

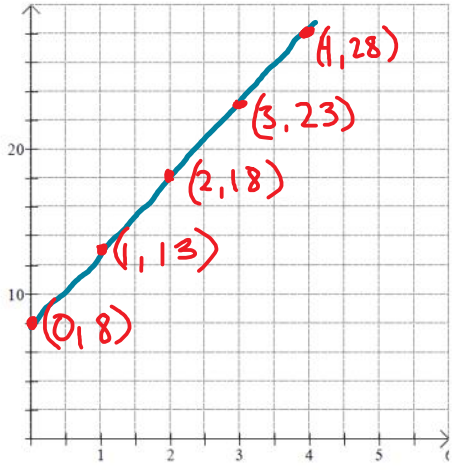
x	y
Hours worked	Money earned
0	8
1	13
2	18
3	23

A table of values is: A chart that shows related data (x,y) pairs

Note: This table could also be drawn as a horizontal table

Convert this to a horizontal table in the space below:

hours	x	0	1	2	3	4	5
$	y	8	13	18	23	28	33



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?

The relationship between 2 sets of data to make a line

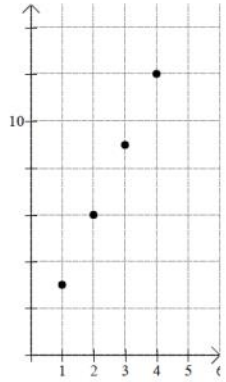
What do you notice about the pattern made by the dots on the graph?

- diagonal line
- x increases by 1
- y increases by 5

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?

- linear relationship
- x-values increase by 1
- y-values increase by 3

Make a table of values for this graph:

#DVDS	x	1	2	3	4	5
cost	y	3	6	9	12	15

If the relationship continues, what might be the cost for 12 DVD's? 36

$12 \times 3 = 36$

continue pattern . 12, 15, 18, 21 . _ 36

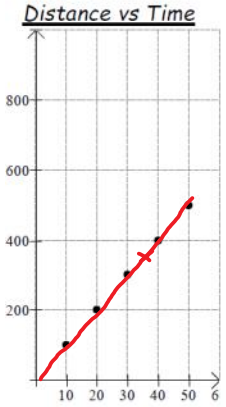
Could you make a prediction for how much 20.5 DVD's might cost?

$20.5 \times 3 =$ $61.50

205 x 3 = $615.00

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.

time (s)	x	10	20	30	40	50	60	70	80
distance (m)	y	100	200	300	400	500	600	700	800

AMake a prediction for when he will finish.

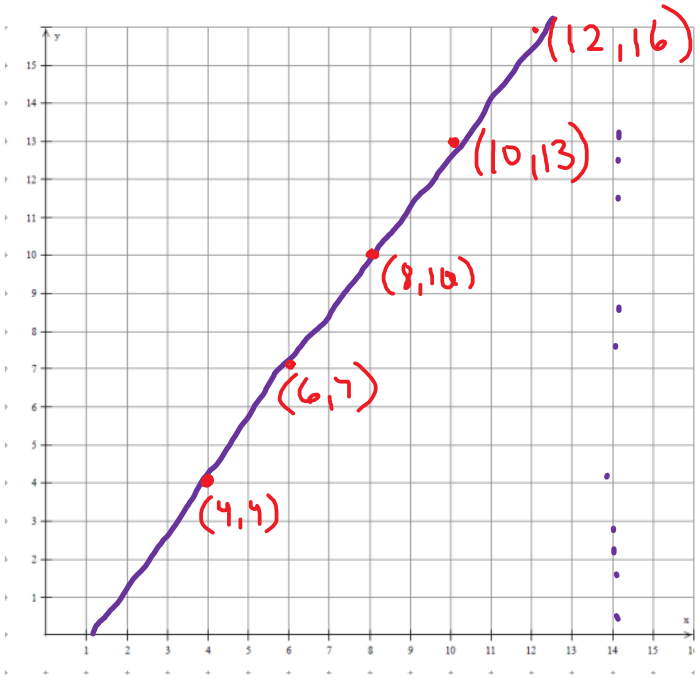
he should reach 800m after 80 seconds

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

he should be @ 350 m if it makes sense to have numbers between the values, you can connect the dots

Use the table to plot the graph and find 2 more numbers that might fit the table:

x	4	6	8	10	12	14
y	4	7	10	13	16	19



x, y

For what value of *a* would (14,a) be a coorindate on the graph?

x = 14 y = ? (14,19) is on the line

a = 19