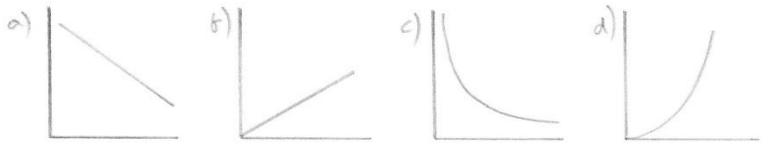
1. Which one of these graphs shows direct proportion?



2. Which of these formulae represent direct proportion?

   a) $y = \frac{k}{x}$ b) $y = \frac{x}{k}$ c) $y = kx$ d) $k = \frac{x}{y}$

3. The exchange rate £ to $ is in direct proportion.
   On one particular day £1 = $1.18
   Vinny changed £150. How many $ did he receive?
4. Distances measured in km are directly proportional to distances in miles.
   If 1 mile = 1.6 km:
   a) How many km is 5 miles?
   b) How many miles is 20km?
5. The table shows the price of popcorn buckets at a cinema.

Size (g)	150	200	250	350
Cost (£)	6.75	9.00	10.99	14.99

   Is the cost of the popcorn in direct proportion to the size of the buckets? Why/why not?

Answers:

1. Graph b). Direct proportion is always a straight line and always passes through (0,0)
2. $y = kx$
3. £150 x 1.18 = $177
4. a) 5 x 1.6 = 8km b) 20 ÷ 1.6 = 12.5 miles
5. No they are not in direct proportion.

y	Size (g)	150	200	250	350
x	Cost (£)	6.75	9.00	10.99	14.99
k $(y \div x)$		22.22	22.22	22.75	23.35

The values for k are different.
To be in direct proportion all the values for k should be the same.