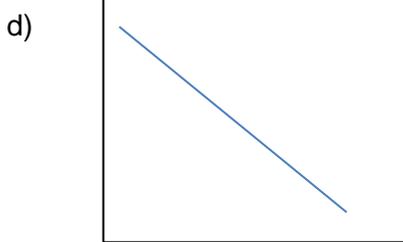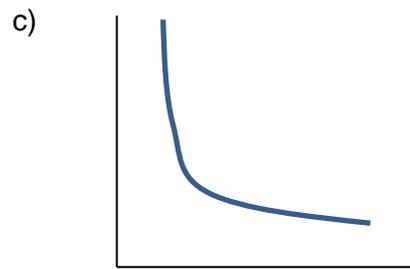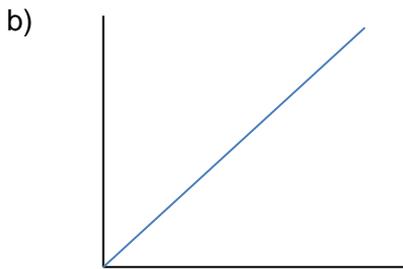# SHARP

Worksheet 4 – Proportion, Rates and Percentages
Grade 10 Mathematical Literacy

1. Say whether the following is direct, indirect or inverse proportion and why:

    a) The more kilometres you drive the more petrol you buy.

    b)

    c)

    d)

    e) The more money you spend the less money you have in your bank account.

    f) It takes 3 people 4 hours to clean a house and 2 people 6 hours to clean a house.

    g) The further up the mountain you climb, the less oxygen there is.

    h) The longer you leave your phone on charge, the fuller the battery will be.

    i) The more electricity you save, the smaller your electricity bill will be.

    j) 4 packers can pack 5 boxes in 1 hour, while 1 packer can pack 5 boxes in 4 hours.
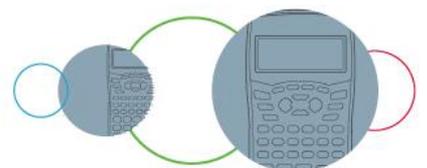
2. Complete the tables and then say what kind of proportion each table represents:

    a)

Speed (Km/h)	100	120	140	150	160	170		x
Safety rating	90			60			50	

    b)

Items	3	6	9	10	12		20	30	x
Cost	R78			R260		R390			

c)

Number of minutes brushing teeth	0	1	2	3	$3\frac{1}{2}$	4		5	$5\frac{1}{2}$	x
Number of cavities	70	58	46				16			

d)

Number of items bought	10	20	40	50		100		200	x
Cost per item	R120	R60			R16		R7.50		

e)

Mm of rain	5	10	12		20		30	35	x
Number of car accidents	13	23		33		57			

3.   Plot the coordinates of each of the tables in question 2 and connect the dots to create a graph.

4.   Give the simplified rates for each of these:
   a)   Paying R139.80 for $12l$ of petrol.   b)   Travelling 500km in 4 hours.
   c)   480g cereal for R32.99   d)   A tap drips 190ml over 10 minutes.
   e)   991 people stood in a queue over 5 hours.

5.   For each of the questions below choose the cheaper option. Show all your working out.
   a) $1.5l$ Apple juice for R16.99 or $3l$ Apple juice for R36.99
   b)   300g bran flakes for R22.99 OR 500g bran flakes for R29.99 OR 750g bran flakes for R43.99.
   c)   500g corn flakes for R27.49 OR 750g corn flakes for R34.19 or 1.2kg corn flakes for R44.95.
   d)   200g coffee for R89.99 OR 100g of coffee for R54.99
   e)   500g brown sugar for R6.99 OR 1kg brown sugar for R9.49 OR 5kg brown sugar for R43.99
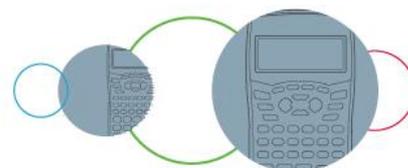
6. Add the percentages given after each number to that number.

   a) 5 085 + 27%   b) 450 + 95%

   c) 681 + 63%   d) 130 143 + 40%

   e) 70 + 80%   f) 3 133 + 15%

   g) 200 + 85%   h) 67 + 75%

   i) 4 144 554 + 99%   j) 50 + 10%

7. Subtract the percentages given after each number from that number.

   a) 62 – 50%   b) 42 246 – 75%

   c) 862 – 99%   d) 6 917 – 10%

   e) 430 473 – 25%   f) 8 000 – 65%

   g) 7 – 80%   h) 750 – 40%

   i) 2 558 – 30%   j) 245 – 27%

8. What is:

   a) 38% of R1 162?   b) 2% of 170?

   c) 79% of 410?   d) 9% of 5 483?

   e) 100% of 7 561?   f) 60% of 8 719 581?

   g) 15% of 952?   h) 25% of 343?

   i) 150% of 700   j) 1% of 9 372

9. A clothing store is having a sale. Originally they marked a shirt up from the cost price by 80% to R94.70. The sale then gives a discount of 35%.

   a) Determine the original cost price of the shirt.

   b) Determine the sale price of the shirt.

   c) Determine how much money the store makes from the sale of the shirt.

   d) How much money would the store have made if the shirt had been sold at R94.70?

   e) What percentage of the profit was lost due to selling the item at a lower price?