SHARP

Worksheet 4 Memorandum – Finance

Mathematical Literacy – Grade 11

1. a) $60\% \, of \, January \, profit + 60\% \, of \, February \, profit + 60\% \, of \, March \, profit$

$= (R482 \times 60\%) + (R1938 \times 60\%) + (R4154 \times 60\%)$

$= R289.20 + R1162.80 + R2492.40$

$= R3944.40$

b) Rent income is a fixed income.

c) $\frac{10000}{17950} \times 100 = 55.71\%$

d) $February \, Sales \div 950 \, cupcake$

$14\,250 \div 950 = R15 \, per \, cupcake$

e) $R15 \times 2\,843 = R\,42\,645$

f) $MU\,\% = \frac{selling \, price - \, cost \, price}{selling \, price} \times 100$

$MU\,\% = \frac{15-4.5}{15} \times 100$

$MU\,\% = 70$

The mark up on one cupcake is 70%

2. a) $(3 \times 60 + 46) \times \frac{R\,1.35}{60 \, seconds} = R\,5.09$

b) $\frac{R\,30.00}{R\,3.00} = 10 \, minutes$

c) $\frac{R\,8.55}{3} = R\,2.85 \, so \, her \, brother \, is \, on \, MTN \, or \, CellC$

d) $\frac{R24.00}{R\,2.00/minute} = 12 \, minutes. \, Thando \, was \, on \, the \, phone \, for \, 12 \, minutes.$

e) $R\,24.00 - (8 \times R\,0.96)$

$R\,24.00 - R\,11.52$

$R\,12.48$

Thando would have saved R 12.48 by calling during off-peak times.

3. a) $R\,6.50 + 120\% = R\,14.30$
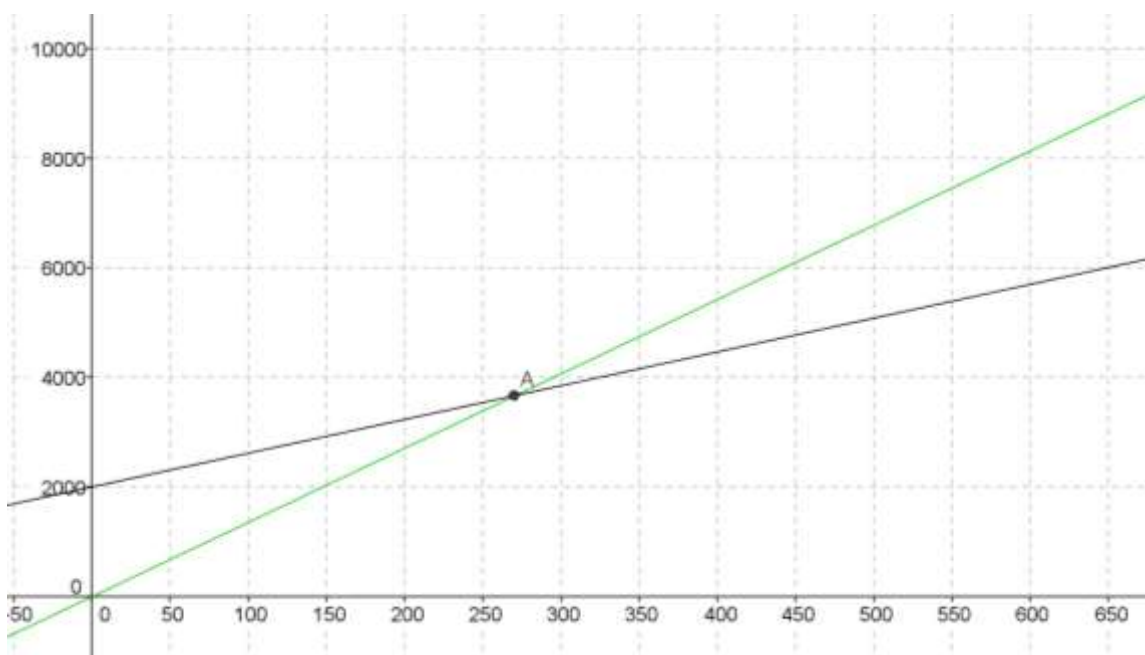
b) $R\,6.00 + 120\% = R\,13.20$

c) Completed in red:

Choc-chip delights

Number of units	50	80	**100**	150	180	200	250	300
Cost	**325**	520	650	975	1170	1300	**1625**	**1950**
Income	715	1144	1430	2145	2574	**2860**	3575	**4290**

Caramel dreams

Number of units	**100**	160	200	300	360	400	**500**	**600**
Cost	600	960	**1200**	1800	2160	2400	3000	3600
Income	1320	2112	2640	3960	**4752**	5280	6600	7920

d)

Green line $= \frac{1}{3}(14.30 + 13.20 + 13.20)x$

Black line $= \frac{1}{3}(6.50 + 6 + 6)x + 2\,000$

e) Indicated on the graph at point A.

f) Yes the factory will make a profit because they need to sell a minimum of only about 265 packets of biscuits before they start making a profit.

PROUD DISTRIBUTOR OF **SHARP**

www.mathsatsharp.co.za

SMD TECHNOLOGIES

g) Choc-chip delights: Caramel dreams:

$$MU\% = \frac{selling\ price - cost\ price}{selling\ price}$$ $$MU\% = \frac{selling\ price - cost\ price}{selling\ price}$$

$$MU\% = \frac{15 - 6.50}{15}$$ $$MU\% = \frac{15 - 6.00}{15.00}$$

$$MU\% = 56.67$$ $$MU\% = 60$$

4.

BANK NAME	BANK A	BANK B	BANK C
LOAN AMOUNT (R)	20 000	14 000	14 000
INTEREST RATE p.a.	7.0 %	8.2 %	9 %
LOAN TERM (months)	30	48	36
AMOUNT REPAYABLE	23 685.88	19 188.33	18 130.41
MONTHLY INSTALMENT	789.53	399.76	503.62

a) BANK A BANK B BANK C

$$A = P(1 + i)^n$$ $$A = P(1 + i)^n$$ $$A = P(1 + i)^n$$

$$A = 20\ 000\left(1 + \frac{7}{100}\right)^{30 \div 12}$$ $$A = 14\ 000\left(1 + \frac{8.2}{100}\right)^{48 \div 12}$$ $$A = 14\ 000\left(1 + \frac{9}{100}\right)^{36 \div 12}$$

$$A = 20000(1.07)^{2.5}$$ $$A = 14\ 000\ (1.082)^4$$ $$A = 14\ 000(1.09)^3$$

$$A = 23\ 685.88$$ $$A = 19\ 188.33$$ $$A = 18\ 130.41$$

b) BANK A BANK B BANK C

$$\frac{23\ 685.88}{30} = R\ 789.53$$ $$\frac{19\ 188.33}{48} = R\ 399.76$$ $$\frac{18\ 130.41}{36} = R\ 503.62$$

c)

start	6 months	1 year	1 year 6 months	2 years
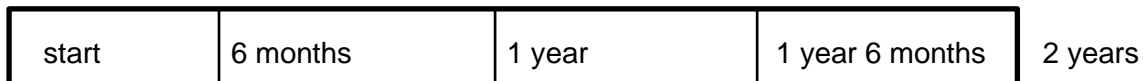
10 000 adds 2 700 adds 2 700 adds 2 700 adds 2 700

1. $A = P(1 + i)^n$ 2. $A = P(1 + i)^n$ 3. $A = P(1 + i)^n$

$$A = 10\ 000\left(1 + \frac{12}{100}\right)^{\frac{6}{12}}$$ $$A = 13283.01\left(1 + \frac{12}{100}\right)^{\frac{6}{12}}$$ $$A = 16757.42\left(1 + \frac{12}{100}\right)^{\frac{6}{12}}$$

$$A = 5\ 600$$ $$A = 14\ 057.42$$ $$A = 17\ 734.39$$

4. $A = P(1 + i)^n$ 5. At the end of the second year when Johan adds his R21 625.73

$$A = 20434.39\left(1 + \frac{12}{100}\right)^{\frac{6}{12}}$$ that he invested to his R 2 700 that he saved he will have enough

$$A = 21\ 625.73$$ money to go on holiday. (R 24 325.73)

d)   I would recommend that Johan should save up for 2 years and then go on holiday because he started with R 10 000 and he will only have to save up R 450 per month for 24 months, which means he only spends R 20 800 in total on his holiday. If he loans money he will end up paying more for his holiday than the cost of the holiday (Or any other logical answer).

5. a) $R\ 29\ 000\ \times \frac{19}{100} = R5\ 510$

    b) $Gross\ salary\ \times 5\%$

         $=\ R\ 20\ 000\ \times 5\%$

         $=\ R\ 1\ 000$

    c)   Medical aid: $R\ 2\ 130 + R\ 1\ 370 = R\ 3\ 500$

    d)   Retirement fund: $R\ 1\ 000 + R\ 1\ 250 = R\ 2\ 250$

    e) $R\ 29\ 000 - (R5\ 510 + R\ 3\ 500\ +\ R\ 2\ 250) = R\ 17\ 740$

    f) $Magic\ Electronics - ABC\ Electronics\ =\ difference\ in\ the\ two\ salaries$

         $R\ 17\ 740 - R\ 16\ 180.75 = R\ 1\ 559.25$

    g)   Felicity should take the job at Magic Electronics because she will earn more money
         there.

6. a)

$(22.9, 3435)$

breakeven point
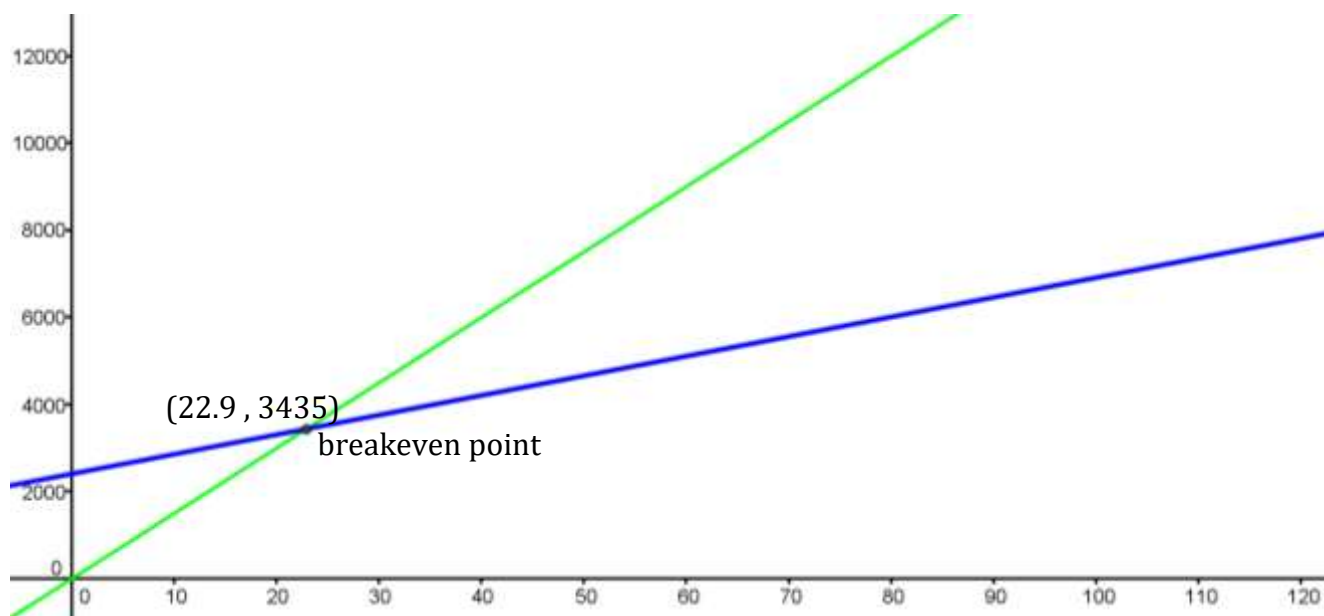
    b)   Indicated on the graph

    c)   They would need to sell 23 (+ or – 2)dresses before they started to make a profit. (you
         can not sell part of a dress so round up from 22.9)

    d) $100\ dresses\ \times R\ 150 = R\ 15\ 000$

    e) $R\ 15\ 000 - costs$

         $=\ R\ 15\ 000 - R\ 2\ 400 - (R\ 45\ \times 100)$

         $=\ R\ 15\ 000 - R\ 2\ 400 - R\ 4\ 500$

         $=\ R\ 8\ 100\ profit\ is\ made\ on\ 100\ dresses$

    f) $80\ dresses\ \times R\ 150 = R\ 12\ 000$ the order in Rands

         $R\ 12\ 000\ \div \frac{R10.02}{1\$} = \$1\ 197.60\ \ \ \ \therefore The\ customer\ will\ pay\ us\ \$\ 1\ 197.60\ for\ 80\ dresses$