ANSWERS

Ratio & PL

Core 1

Topic: Ratio & PL

Question 1

a) Find 15% of £520

$$\boxed{10\% = £52}$$
$$\div 2 \quad 5\% = £26 \quad \div 2$$
$$+ \quad \underline{\quad £78 \quad}$$

Grade 4 (2 Marks)

b) Massimo achieves 78% in a test. Sarah scores 27 out of 36 in a test.
What is the difference between Massimo and Sarah's result?

$$\frac{\cancel{27}^{9}}{\cancel{36}_{9}} = \frac{3}{4} = 75\%$$

Difference = 3%

Core 2

Topic: Ratio & PL

Question 2

a) Amiee's travel commute cost £1200 in 2020. In 2021, her commute cost had increased to £1260 . What was the percentage increase in her travel cost from 2020 to 202

$$\boxed{\% \text{ change} = \frac{\text{Difference}}{\text{Initial value}} \times 100}$$

$$\frac{6\cancel{0}}{120\cancel{0}} \times 100$$

$$= \frac{\cancel{6}^{6}}{\cancel{120}_{6}} = \frac{1}{20} \times 100 = 5\%$$

Grade 4 (2 Marks)

b) Sean bought a car for £12,500. The following year it had decreased to £10,000. What was the percentage decrease in the value of the car over the year?

$$\frac{2{,}5\cancel{00}}{12{,}5\cancel{00}} \times 100 = \frac{\cancel{25}^{25}}{\cancel{125}_{25}} = \frac{1}{5} \times 100$$

$$= 20\%$$

MATHS Memory

Core 3 - Bronze

Topic: Ratio & PL

Question 3

a) Leon has £4000 in his savings account. The interest rate is 2.8% per year. How much does Leon have after one year in his savings account?

$4000 \times (1.028) = £4{,}112$

M.F

$1 + \frac{x}{100} = 1.028$

Grade 4 (2 Marks) Calculator

b) Alice buys a flat for £150,000. It has decreased in value by 4% over the year. How much is the flat worth now?

$150{,}000 \times (0.96) = £144{,}000$

M.F

$1 - \frac{x}{100} = 0.96$

Grade 4 (2 Marks) Calculator

c) Coby has run 12 km in a marathon. This is only 40% of the whole race. What is the total distance of the marathon?

$x \times 0.4 = 12\text{km}$

$x = \frac{12}{0.4} = 30\text{km}$

0km 12km

40% 60%

MATHS Memory

Tanzania

Core 4 - Bronze

Topic: Ratio & PL

Question 4

Amy, Beth and Carl share £240 in the ratio 3:4:5.

How much do they each receive?

Identify: Total Ratio

Step 1 [Add units]

$3+4+5 = 12$ units

Step 2 [Divide]

$\frac{240}{12} = £20$

$\boxed{1 \text{ unit} = £20}$

Step 3

Multiply each one

Amy: 60 [20×3]

Beth: 80 [20×4]

Carl: 100 [20×5]

MATHS Memory
Tanzania

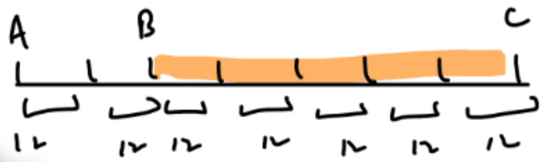
Core 5 - Bronze

Topic: Ratio & PL

Question 5

ABC is a straight line.

The ratio of length AB:BC = 2:5.
BC = 60 m



Step 1: Divide
$5\overline{)60}$ = 12

Step 2
1 unit = 12 m

Step 3
Multiply

Identify:
Single Ratio

a) Work out the length AB.

$12 \times 2 = \underline{24 m}$

b) Work out the length AC.

$12 \times 7 = \underline{84 m}$

MATHS Memory
Tanzania

Core 6 - Silver

Topic: Ratio & PL

Question 6

Ben is 5 years younger than Amy. Carl is double Ben's age. The sum of their ages is 33 years

Step 1: Identify context

A: x
B: $(x-5)$
C: $2(x-5)$

Step 2 Create expressions

$= \underbrace{x}_{A} + \underbrace{x-5}_{B} + \underbrace{2x-10}_{C}$

$= 4x - 15$

Step 3 Create equation

$4x - 15 = 33$
$4x = 33 + 15$
$4x = 48$
$\underline{x = 12}$

Work out all their ages

Amy: 12

Ben : 7

Carl: 14

Check: 12 + 7 + 14 = 33 ✓

Maths Memory
Tanzania

Core 7 - Silver

Topic: Ratio & PL

Question 7

Sogol invested an amount of money at 4% per annum, compound interest.
At the end of 2 years, the value of the investment was £3652.25.

Calculate the initial amount of money that Sogol invested.

$$x \times (1.04)^2 = 3652.25$$

$$x = \frac{3652.25}{(1.04)^2}$$

$$x = £3376.71$$

Maths Memory
Tanzania

Core 8 - Silver

Topic: Ratio & PL

Question 8

Henry invests £4,500 at a compound interest rate of 5% per annum.
At the end of n complete years, the investment has grown to £5743.27. Find the value of n.

Try $n=4$ $\quad 4,500 \times (1.05)^4 £5,469.78$ (Low)

Try $n=6$ $\quad 4,500 \times (1.05)^6 = £6,030.43$ (High

Try $n=5$ $\quad 4,500 \times (1.05)^5 = £5,743.27$

MATHS Memory Tanzania

Core 9 - Gold

Topic: Ratio & PL

+ 29,300

− 29,500

Question 9

Lily started a business on 1st September, 2021 with a capital of Tshs 20, 000/= cash.

September 2. bought computer for cash 10,000/=

4. Sold goods for cash 4,000/=
5. Purchased goods on credit 2,000/=
8. Paid wages 6,000/=
9. Debtors paid 2,500/=
10. Purchased goods 3,000/=
11. Paid rent 5,000/=
15. Sold goods on credit 8,000/=
20. Paid interest 500/=
21. Sold goods 3,000/=
22. Interest received on investments 300/=
29. Paid for travel expenses 1,000/=

By using these transactions, prepare the cash account.

Date	Detail (+)	Day	Tshs	Date	Detail (−)	Day	Tshs
1/9	Capital	01	20,000	2/9	Comp C.E	02	10,000
4/9	Sale	04	4,000	8/9	Wages	08	6,000
9/9	Debtors	09	2,500	10/9	Purchase	10	3,000
21/9	Sale	21	3,000	11/9	Rent	11	5,000
22/9	Interest	22	300	20/9	Interest	20	500
30/9	Bal b/d		200	29/	Travel	29	1,000
			29,500				29,500
				1/10/21	Bal b/d		29,500

Gold

MATHS Memory Tanzania

Core 10- Gold

Topic: Ratio & PL

Question 10

Use the following trial balance to prepare trading, profit and loss account for Mr Smith as at 31st December 2016.

Account name	Dr (−)	Cr (+)
Cash	1,500,000	
Capital		2,800,000
Purchases	1,800,000	
Rent	300,000	
Computer	500,000	
Furniture	1,300,000	
Sales		3,000,000
Wages	400,000	
	5,800,000	**5,800,000**

31/12/16

Dr		Cr	
Purchases	1,800,	Sales	3,000,
COGS	1,800.		
Gross Profit c/d	1,200		
	3,000		3,000
Rent	300	Gross Profit C/D	1200
Wages	400		
Net Profit	500		
	1,200		1200

Gold