

QUESTION ONE

1.1. Muffin sales for a week at Siyafunda Bakery. ✓

1.2. $35 + \dots 130 = 965$ ✓✓

1.3. ChocChip: $55+35+90+65+130=375$ ✓

$$\frac{375}{965} \times 100 \checkmark = 38,9\% \checkmark$$

$$1.4. 100 \times \frac{130 \checkmark - 65 \checkmark}{65 \checkmark} = 100\% \checkmark$$

OR

100% since the sales doubled from 65 to 130.

1.2.

$$1.2.1. R^{249}/_{500} \checkmark = R0,498 \approx 50c \checkmark$$

$$1.2.2. R202 + R199 \checkmark = R401 \checkmark$$

1.2.3. (a) I-DATA:

$$450 \text{ Mb} = 350 \text{ Mb} + 100 \text{ Mb (out of bundle)} \checkmark$$

$$\text{Cost of 100 Mb} = 100 \times R0,35 \checkmark = R35 \checkmark$$

$$\text{Therefore total cost: } R199 + R35 = R234 \checkmark$$

(b) NetSmart:

$$\text{Cost} = R249 \text{ (within the data bundle)} \checkmark \checkmark$$

20 MARKS**QUESTION TWO**

2.1.

$$2.1.1. 04\text{min } 55\text{s} \checkmark = (4 \times 60) + 55 = 295\text{s} \checkmark$$

$$07\text{min } 12\text{s} \checkmark = (7 \times 60) + 12 = 432\text{s} \checkmark$$

$$\text{Total: } 295 + 432 = 727\text{s} \checkmark$$

$$2.1.2. \frac{727}{2} = 363,5\text{s} \checkmark$$

$$2.1.3. 01\text{min } 55\text{s} = 115\text{s} \checkmark$$

$$03\text{min } 12\text{s} = (3 \times 60) \checkmark + 12 = 192\text{s} \checkmark$$

$$\text{Total: } 115 + 192 = 307\text{s} \checkmark$$

2.2.

$$2.2.1. 04\text{min } 42\text{s} = 1 \text{ min} + 3\text{min } 42\text{s} \checkmark \\ = 1 \text{ min} + (6 \times 30\text{s}) \checkmark + (30\text{s} + 12\text{s}) \checkmark \\ = 1 \text{ min} + (8 \times 30\text{s}) \checkmark$$

$$2.2.2. R2,25 \checkmark + (8 \times R0,94) \checkmark = R9,77 \checkmark$$

2.3.

$$2.3.1. 180 \times 60 = 10\,800\text{s} \checkmark \checkmark$$

$$2.3.2. (a) R^{419}/_{10800} \checkmark = R0,0388 \checkmark = 3,9c/s \checkmark$$

$$(b) R^{419}/_{10\,000} \checkmark = R0,0419 \checkmark = 4,2c/s \checkmark$$

2.3.3. Option B ✓; per second billing is advantageous. ✓

In Option A, there will be wastage because of the per minute billing. i.e. As an example: 1 min 3s will be billed as 2 min. ✓

28 MARKS

QUESTION THREE

3.1. 18% of R40 000 = R7 200✓

He is 44 years old; Rebate = R6 300✓

Tax paid = R7 200 – R6 300✓ = R900✓

3.2.

3.2.1. Tax Bracket:

R26 900 + 30% of amount over R130 000✓

Amt over R130 000:

R145 000 – R130 000 = R15 500✓

R26 900 + 30% of R15 500✓ = R31 550✓

Rebate: R 6300✓

R31 550 – R6 300 = R25 250✓

3.2.2. R145 500✓ – R25 250✓ = R120 250✓

3.2.3. (a) $\frac{R145\ 500}{12}$ ✓ = R 12 125✓

(b) $\frac{R120\ 250}{12}$ ✓ = R10 020,833 = R10 020,83✓

3.3.

3.3.1. 9 = 4 + 4 + 1

Free✓ + (4xR7,50)✓ + (1xR12)✓ = R42✓

3.3.2. 0✓✓

3.4.

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

$$= 15\ 000\left(1 + \frac{4}{100 \times 12}\right)^{2 \times 12} \checkmark$$

$$= 15\ 000\left(1 + \frac{4}{1200}\right)^{24}$$

R32 950,48 ✓

3.5.

$$F = \frac{300 \checkmark \left[\left(1 + \frac{7}{100 \times 12}\right)^{2 \times 12} \checkmark - 1 \right]}{\frac{7}{100 \times 12} \checkmark}$$

$$= \frac{300 \left[\left(1 + \frac{7}{1200}\right)^{24} - 1 \right]}{\frac{7}{1200}}$$

= R7 704,31 ✓✓

3.5.1. R300 ✓ x 24 ✓ = R7 200 ✓

3.5.2. R7 704,31 – R7 200 ✓ = R504,31 ✓

40 MARKS

QUESTION FOUR

4.1.

4.1.1. 20mm✓

4.1.2. 17,5mm✓

4.2. Area of larger circle:

$$A = \pi \times r \times r = 3,14 \times 20 \times 20 \checkmark = 1\,256\text{mm}^2 \checkmark$$

Area of smaller circle:

$$A = \pi \times r \times r = 3,14 \times 17,5 \times 17,5 \checkmark = 961,63\text{mm}^2 \checkmark$$

$$\text{Area of shaded part} = 1\,256 - 962,63 = 294,37\text{mm}^2 \checkmark$$

4.2.1. $1\text{ cm}^2 \rightarrow 100\text{mm}^2 \checkmark$
 $X\text{ cm}^2 \rightarrow 294,27\text{mm}^2$

$$X = 2,9437\text{cm}^2 \checkmark$$

$$2,9437 \times 0,155 \checkmark = 0,456\text{in}^2 \approx 0,46\text{in}^2 \checkmark$$

4.3. $V = \pi \times r \times r \times h = 3,14 \times 17,5 \checkmark \times 17,5 \checkmark \times 5 \checkmark$
 $= 52\,889,38\text{mm}^2 \checkmark \checkmark$

4.4. Length: $35 \times 8 = 280\text{mm} \checkmark \checkmark$; breadth: $35 \times 4 = 140\text{mm} \checkmark \checkmark$

20 MARKS

QUESTION FIVE

5.1.

5.1.1. Maintenance $\checkmark \checkmark$

5.1.2. $100 \checkmark - 35 - 10 - 5 - 25 - \checkmark = 20\% \checkmark$

5.1.3. $\frac{25}{100} \times R215\,550 \checkmark = R53\,887,50 \checkmark$

5.1.4. $35\% \text{ of } R215\,550 = R64\,665 \checkmark$
 $R64\,665 \checkmark + R80\,000 \checkmark = R144\,665 \checkmark$

5.1.5. $30\% \text{ of } R1\,210 = R363 \checkmark$

$$R200 \times 363 \checkmark = R72\,600 \checkmark \checkmark$$

5.1.6. (a) $\frac{50\,000}{250\,000} \checkmark \times 100 = 20\% \checkmark$

(b) Increase \checkmark by $15\% \checkmark$

20 MARKS

QUESTION SIX

6.1. **10,90; 10,90; 10,94; 10,95; 10,99; 11,01;**
11,24; 11,25; 11,30; 11,33; 11,38; 11,40

6.1.1. median = $\frac{(11,01+11,24)}{2} \checkmark = 11,125 \approx 11,13\text{s} \checkmark$

6.1.2. $Q_1 = \frac{(10,94+10,95)}{2} \checkmark = 10,945 \approx 10,95\text{s} \checkmark$

6.1.3. $Q_3 = \frac{(11,30+11,33)}{2} \checkmark = 11,315 \approx 11,32\text{s} \checkmark$

6.1.4. IQR = $11,32 - 10,95 \checkmark = 0,37 \checkmark$

6.2.

6.2.1. $\frac{75}{100} \checkmark \times 12 = 9^{\text{th}} \text{ value} \checkmark$

9th value is $11,30\text{s} \checkmark \checkmark$

6.2.2. Sid will not qualify \checkmark for the championship because his 75th percentile is greater \checkmark than $11,25\text{s}$.

6.3.

6.3.1. $P(\text{Blackcurrant}) = \frac{24}{200}$ ✓

6.3.2. $46 + 18 = 64$ ✓
 $P(\text{Orange or Guava}) = \frac{64}{200}$ ✓✓

6.3.3. $200 - 27 = 173$ ✓

$P(\text{Not Orange}) = \frac{173}{200}$ ✓✓

22 MARKS