MEMORANDUM

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GRADE 11 EXAMINATIONS
GRAAD 11-EKSAMEN

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MATHEMATICAL LITERACY – FIRST PAPER

This memorandum consists of 11 pages.
QUESTION 1

1.1.1 1 cup = 215 g margarine
   \[ \frac{1}{2} \text{ cup} = \frac{1}{2} \times 215 \text{ g} \checkmark \]
   \[ = 143,33 \text{ g} \checkmark \]
   \[ = 143 \text{ g} \checkmark \]
   OR

   \[ \frac{1}{2} \text{ cup} = x \text{ g} \]
   \[ x = \frac{1}{2} \times 215 \checkmark \]
   \[ = 143,33 \checkmark \]
   \[ = 143 \text{ g} \checkmark \]
   Multiplication
   Answer
   Rounding

1.1.2 1 kg = 1 000 g

\[ \text{R21,95} \div 1\ 000 \text{ g} \checkmark \]

\[ = \text{R0,02 per gram} \checkmark \text{ or 2 cents per gram} \]
   Division
   Answer

1.1.3 The 5 ml spoon \checkmark
   Answer

1.1.4 1 batch = 3,75 units

\[ 8 \text{ batches} = 3,75 \times 8 \checkmark \]

\[ = 30 \text{ units} \checkmark \]
   Multiplication
   Answer

1.1.5 Total cost of electricity = 30 units \times 59,85 c \checkmark

\[ = 1\ 795,5 \text{ c} \]

\[ = \text{R17,96} \checkmark \]
   Multiplication
   Answer
   Rounding

1.1.6 8 batches \times 24 cookies \checkmark

\[ 192 \text{ cookies} \checkmark \]
   Multiplication
   Answer

1.1.7 192 cookies \div 15 \checkmark = 12,8 boxes \checkmark

\[ \text{They will pack 12 boxes per day} \checkmark \]
   Division
   Answer
   Rounding

1.1.8 \[ ^\circ \text{C} = \frac{5}{9} (^\circ \text{F} - 32) \]

\[ = \frac{5}{9} (356 - 32) \checkmark \]

\[ = 180^\circ \text{C} \checkmark \]
   Substitution
   Answer
1.1.9 Total wages per week = 7 hours per day x 3 days ✓ Multiplication
= 21 hours ✓ Multiplication
= 21 hours x R7,50 ✓
= R157,50 per week ✓ Answer

QUESTION 2

2.1 He walks at a speed of 4 km/h
Thus he walks 4 km ✓ Answer

2.2.1 Value of A:

Distance = Speed x time
= 4 km/h x 0,5 hours ✓ Substitution
= 2 km ✓ Answer

Value B:

Distance = Speed x time
5 km = 8 km/h x time
Time = \( \frac{5 \text{ km}}{8 \text{ km/h}} \)

\[ \frac{5}{8} \text{ hours} = 1,25 \text{ hours} ✓ \text{ OR } 1\frac{1}{4} \text{ hours OR } 1\text{h}15 \text{ min} \]

OR

Value of A:

Learners can see the pattern ✓ 1, 2, 3 … and for giving the answer of 2 km ✓ Pattern

Value of B:

Learners can see the pattern ✓ 15 minutes (\( \frac{1}{4} \) which is 0,25)… and for giving the answer of 1,25 hours ✓ Pattern

2.2.2 At 06:15 he was 1 km away from home. ✓ Time
6 km – 1 km = 5 km

He is thus 5 km ✓ away from school. Answer

2.2.3 06:30 + 15 minutes = 06:45 ✓ Answer
2.3.1 **Value of C:**

Distance = Speed × time
\[ = 8 \text{ km/h} × 0,25 \text{ hours} \checkmark \]
\[ = 2 \text{ km} \checkmark \]

**Value D:**

Distance = Speed × time
\[ 6 \text{ km} = 8 \text{ km/h} × \text{time} \]
Time = \[ \frac{6 \text{ km}}{8 \text{ km/h}} \checkmark \]
\[ = 0,75 \text{ hours} \checkmark \text{ OR } \frac{3}{4} \text{ hours OR } 45 \text{ min} \]

OR

**Value of C:**

Learners can see the pattern \( \checkmark 2, 4, 6 \ldots \) and for giving the answer of 2 km \( \checkmark \)

**Value of D:**

Learners can see the pattern \( \checkmark 15 \text{ minute (} \frac{1}{4} \text{ which is } 0,25) \ldots \) and for giving the answer of 0,75 hours \( \checkmark \)

(4)

2.3.2 At 06:30 \( \checkmark \) Jason was 2 km away from home; at 06:45 \( \checkmark \) Chanté was 2 km away from home

Answers (2)

2.3.3 Jason \( \checkmark \)

Answer (1)

2.3.4 07:00

Answer (1)

2.3.5 2 points on Chanté’s line to be marked
2 points on Jason’s line to be marked
Jason’s line to start from 06:00
Chanté’s line to start from 06:30

(6)
DISTANCE TRAVELLED FROM HOME BY JASON AND CHANTÉ

<table>
<thead>
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<th>Time</th>
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<th>Chanté</th>
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<tr>
<td>06:00</td>
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<td>06:15</td>
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<tr>
<td>06:30</td>
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<tr>
<td>06:45</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>07:00</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>07:15</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>07:30</td>
<td>6</td>
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</table>
2.3.6 On graph. One mark is given for drawing in the broken line at 6 km. One mark is given for writing Jason’s name under the time of 07:30. Broken line at 6 km reading on graph. Answer (2)

2.3.7 On graph. One mark is given for drawing in the broken line at 6 km. One mark is given for writing Chanté’s name under the time of 07:15. Broken line at 6 km reading on graph. Answer (2)

2.3.8 15 min after 07:15 is 07:30 She would be 2 km past the school. Adding 15 minutes Answer (2)
QUESTION 3

3.1 \[0; 9; 10; 10; 10; 10; 18; 21; 30; 43; 51\]

Median = \[\frac{10 + 18}{2}\]
= \[14\]

Arranging from small to large numbers
2 middle numbers
Dividing by 2
Answer \(\sqrt{4}\)

3.2 \[4; 6; 6; 8; 12; 23; 29; 31; 50; 51\]

Median = \[\frac{12 + 23}{2}\]
= \[17.5\]

Arranging from small to large numbers
2 middle numbers
Dividing by 2
Answer \(\sqrt{4}\)

3.3 Team A’s mode = 10

Team B’s mode = 6

Answer \(\sqrt{2}\)

3.4 Team A’s mean

\[\frac{0 + 9 + 10 + 10 + 10 + 18 + 21 + 30 + 43 + 51}{10}\]

= \[\frac{202}{10}\]
= \[20.2\]

Adding
Dividing by 10
Answer \(\sqrt{3}\)

3.5 Team B’s mean

\[\frac{4 + 6 + 6 + 8 + 12 + 23 + 29 + 31 + 50 + 51}{10}\]

= \[\frac{220}{10}\]
= \[22\]

Adding
Dividing by 10
Answer

Team B has a better batting average than Team A

3.6 Range of Team A = 51 - 0

= 51

Subtract small from big
Answer \(\sqrt{2}\)

3.7 Range of Team B = 51 - 4

= 47

Subtract small from big
Answer \(\sqrt{2}\)

3.8 3 batsmen

Answer \(\sqrt{1}\)
QUESTION 4

4.1 40 m x 56 m
   = 2 240 m²
   Area of Farm = 2 240 m² x 2 = 4 480 m²

4.2 Area of Pond = \( \frac{\pi r^2}{2} \)
   = \( \frac{22 \times 28^2}{7 \times 2} \) \( \checkmark \) \( \checkmark \)
   = 1 232 m²

OR

For \( \pi = 3,14 \)
Area of Pond = \( \frac{\pi r^2}{2} \)
   = \( \frac{3,14 \times 28^2}{2} \) \( \checkmark \)
   = 1 230,88 m²

OR if learners used \( \pi \) on calculator = 1 231,50 m²

4.3 No. of goats per m² is \( \frac{8960}{4480} \) \( \checkmark \)
   = 2 \( \checkmark \)

4.4 Rectangular side is (80 + 80 + 56) = 216 m
   Pond side (arc) is \( \pi r = \frac{22}{7} \times 28 = 88 \) m
   Total length is 216 m + 88 m = 304 m

OR

Rectangular side is (80 + 80 + 56) = 216 m
   Pond side = \( \pi r = 3,14 \times 28 = 87,92 \) m
   Total length = 216 m + 87,92 m = 303,92 m

OR

Rectangular side is (80 + 80 + 56) = 216 m
   Pond side = \( \pi r = \pi \times 28 = 87,96 \) m
   Total length = 216 m + 87,92 m = 303,96 m

4.5 Cost of fence is R45,00 x 304
   = R13 680,00
4.6 R120,00 x 5 ✓
   = R600,00 ✓
Total labour charge is R600,00 x 2 = R1200,00 ✓
   Multiplied by 5
   Multiplied by 2
   Answer (3)

4.7 R13 680 + R1 200 ✓
R14 880,00 ✓
Method
Answer (2)

[18]

QUESTION 5

5.1 Volume = 3,5 m x 1,5 m x 0,5 m ✓
   = 2,625 m³ ✓
   Multiplied
   Answer (2)

5.2 Volume in cm³ = 2,625 m³ x 1 000 000 ✓
   = 2 645 000 cm³ ✓
   Multiplied
   Answer
Volume in litres = 2 625 000 cm³ ÷ 1 000 cm³ ✓
   = 2 625 litres ✓
   Divided
   Answer

5.3 Volume of the bucket = \( \pi r^2 h \)

Volume of the bucket = \( \frac{22}{7} \sqrt{\pi} \) x 14² x 40 cm ✓
   = 24 640 cm³ ✓
   Answer
   Answer in litres

   OR

Volume = \( \pi r^2 h \)
   = 3.14 ✓ x 14² ✓ x 40
   = 24 617.6 cm³ ✓
   = 24.62 litres ✓
   Answer
   Answer in litres

   OR

Volume = \( \pi r^2 h \)
   = \pi ✓ x 14² ✓ x 40
   = 24 630.09 ✓
   = 24.63 litres ✓
   Using Sub. Of r
   Answer
   Answer in litres (4)
5.4 No. Of buckets = \( \frac{2625}{24.64} \) ✔
\[ = 106.53 \ ✔ \]

Division
Answer

OR

No. Of buckets = \( \frac{2625}{24.62} \) ✔
\[ = 106.62 \ ✔ \]

OR

No. Of buckets = \( \frac{2625}{24.63} \) ✔
\[ = 106.58 \ ✔ \]

TOTAL: 100
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<th>Learning Outcomes</th>
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<td>1.1.1 3</td>
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<td>2</td>
<td>Chanté and Jason going to School</td>
<td>2.1 1</td>
<td>1</td>
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<td>Batting Averages</td>
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