MATHEMATICAL LITERACY

BASELINE ASSESSMENTS

GRADES 10 - 12

Grade 10   **Mathematical Literacy**

Baseline Assessment Task

Total Marks: 45   **Duration: 1 hour**

Instructions:

1. Answer ALL the questions.

2. Number the answers correctly according to the numbering system used in this paper.

3. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.

4. Show ALL the calculations clearly.

5. Round off ALL the final answers to TWO decimal places, unless stated otherwise.

6. Write neatly and legibly.

1.   Simplify the following. Show ALL the steps

1.1 $12 + (10 - 8) \div 2$ (2)

1.2 $7 + \sqrt{49} \times 10$ (2)

1.3 $\frac{1}{2} + \frac{1}{3} - \frac{1}{4}$ (2)

2.   Round off 6,1368 to two decimal places   (2)

3.   Work out the following problems:

3.1   Find 21% of R120,00   (2)

3.2   Write $\frac{5}{6}$ as a percentage   (2)

4.   Write the number 1 256 in words.   (2)

5. Musa is a grade 10 learner at Edenburg Combined School. He has a small business where he sells lollipops. He buys a packet consisting of 30 lollipops for R19,95 and he sells each lollipop for R1,00. The table below shows the number of packets he sells per day and the total amount he receives from selling.

Table 1: The number of packets sold per day and the total amount.

Days	Packets	Total amount from selling
1	2	R60,00
2	3	**A**
3	1	R30,00
4	**B**	R60,00
5	3	R90,00

Use the information above to answer the questions below.

5.1 Calculate how much profit Musa will have after selling one packet of lollipops.

(2)

5.2 Calculate the value of A and B in the table. (4)

5.3 Calculate the total amount that Musa will have after five days. (2)

6. Write down the times shown on the analogue clocks given below

        a.   b.   c.

(3)

7. Use the data given below to answer the questions that follow.

20 25 4 27 21 12 4 8 7

7.1 Arrage the data from the smallest value to the highest value (2)

7.2 Which number appear the most and what do we call this number (in terms of datahandling)? (2)

7.3 Calculate the range. (2)

7.4 Calculate the average of the data set. (2)
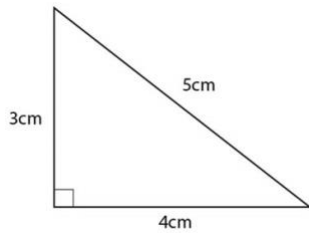
8. Copy and complete these equivalent measures.

8.1 85 cm = _____ mm (2)

8.2 8,21 km = _____ m (2)

8.3 3500 mm = _____ km (2)
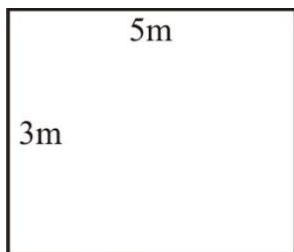
9. Calculate the perimeter of the shapes given below.

9.1

(2)

9.2

(2)

9.3
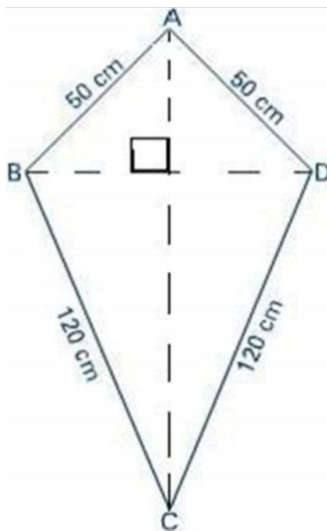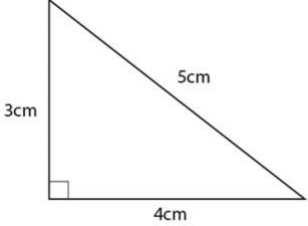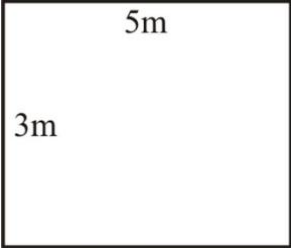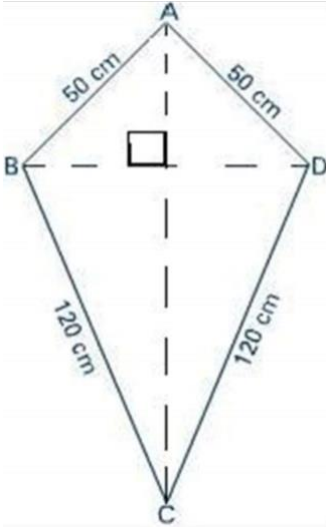
(2)

MARKING GUIDELINE

1.	Simplify the following. Show ALL the steps	
1.1	$12 + (10 - 8) \div 2$ $= 12 + 2 \div 2$ $= 12 + 1$ $= 13$ ✓✓	(2)
1.2	$7 + \sqrt{49} \times 10$ $= 7 + 7 \times 10$ $= 7 + 70$ $= 77$ ✓✓	(2)
1.3	$\frac{1}{2} + \frac{1}{3} - \frac{1}{4}$ $= \frac{6(1) + 4(1) - 3(1)}{12}$ $= \frac{6 + 4 - 3}{12}$ $= \frac{7}{12}$ ✓✓	(2)
2.	Round off 6,1368 to three decimal places 6,137 ✓✓	(2)
3.1	Find 21% of R120,00 $\frac{21}{100} \times$ R120,00 $=$ R25,20 ✓✓	(2)
3.2	Write $\frac{5}{6}$ as a percentage $= \frac{5}{6} \times 100$ $= 83,33\%$ ✓✓ NB: In terms of the initial instruction of the paper it must be rounded to two decimal places	(2)
4.	Write the number 1 256 in words. One thousand two hundred and fifty-six ✓✓	(2)
5.1	Calculate how much profit Musa will have after selling one packet of lollipops. $1 \times 30 =$ R30,00 ✓ R30,00 – R19,95 = R10,05 ✓	(2)

5.2	Calculate the value of A and B in the table.
	 A = 3 x 30
	    = R90,00 ✓
	 B = R60,00 ÷ R30,00
	    = 2 packets ✓
		(4)

5.3	Calculate the total amount that Musa will have at the end of the week. R60 + R90 + R30 + R60 + R90 = R330,00 ✓✓	(2)
6.	Write down the time shown on the analogue clock given below a. b. c. 07:15 ✓ 10:45 ✓ 01:15 ✓ Quarter past seven quarter to eleven quarter past one Fifteen minutes past seven fifteen minutes to eleven fifteen minutes past one	(3)
7.	Use the data given below to answer the questions that follow. 20 25 4 27 21 12 4 8 7	
7.1	Arrage the data from the smallest value to the highest value 4 4 7 8 12 20 21 25 27 ✓✓	(2)
7.2	Which number appear the most and what do we call this number? 4 mode ✓✓	(2)
7.3	Calculate the range. Range = 27 – 4 = 23 ✓✓	(2)

7.4	Calculate the average of the data set.
	 Average = $\frac{4 + 4 + 8 + 7 + 12 + 20 + 21 + 25 + 27}{9}$
	         = $\frac{128}{9}$
	         = 14,22 ✓✓ NB: Rounded to two decimal places
		(2)

8.		
8.1	85 × 10 = 850 mm ✓✓	(2)
8.2	8,21 × 1 000 = 8 210 m ✓✓	(2)
8.3	3500 ÷ 1 000 000 = 0,0035 km ✓✓	(2)

9.1	P = 5 + 3 + 4 = 12 cm ✓✓	(2)
9.2	P = 5 + 5 + 3 + 3 = 16 m ✓✓	(2)
9.3	P = 50 + 50 + 120 + 120 = 340 cm ✓✓	(2)

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Graad 10   **Wiskundige Geletterdheid**

Basislynassesseringstaak

Totaal: 45   **Tyd: 1 uur**

Instruksies:

7. Beantwoord AL die vrae.

8. Nommer die antwoorde korrek volgens die nommeringstelsel wat in hierdie vraestel gebruik is.

9. Jy mag 'n goedgekeurde sakrekenaar (nieprogrameerbaar en niegrafies) gebruik, tensy anders aangedui.

10. Toon ALLE bewerkings duidelik.

11. Rond ALLE finale antwoorde toepaslik volgens die gegewe konteks af, tensy anders aangedui.

12. Skryf netjies en leesbaar.

1.   Vereenvoudig die volgende. Toon AL die stappe.

1.1 $12 + (10 - 8) \div 2$ (2)

1.2 $7 + \sqrt{49} \times 10$ (2)

1.3 $\dfrac{1}{2} + \dfrac{1}{3} - \dfrac{1}{4}$ (2)

2.   Rond 6,1368 af tot drie desimale plekke.   (2)

3.

3.1   Bepaal 21% van R120,00   (2)

3.2   Skryf $\dfrac{5}{6}$ as 'n persentasie   (2)

4.   Skryf die getal 1 256 in woorde.   (2)

5. Musa is 'n graad 10 leerder by Edenburg Gekombineerde Skool. Hy het 'n klein besigheid waar hy stokkielekkers verkoop. Hy koop 'n pakkie waarin daar 30 stokkielekkers is, teen R19,95 en verkoop elke stokkielekker teen R1,00. Die tabel hieronder toon die aantal pakkies wat hy per dag verkoop het, asook die bedrag geld wat hy daarvoor ontvang het.
    Tabel 1:

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| Dae	Pakkies	Totale bedrag met verkope
1	2	R60,00
2	3	**A**
3	1	R30,00
4	**B**	R60,00
5	3	R90,00

Gebruik die inligting om die volgende vrae te beantwoord:

5.1 Bereken hoeveel wins Musa sal maak nadat hy een pakkie stokkielekkers (2)
verkoop het.
5.2 Bereken die waarde van A en B. (4)
5.3 Bereken die totale bedrag wat Musa sal hê na 5 dae. (2)

6. Skryf die tye neer wat deur die analooghorlosies voorgestel word.

    b.   b.   c.
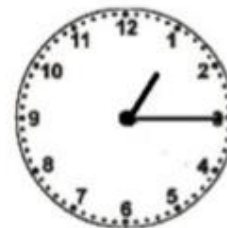
(3)

7. Gebruik die data om die volgende vrae te beantwoord.

20 25 4 27 21 12 4 8 7

7.1 Rangskik die data van die kleinste waarde tot die grootste waarde. (2)
7.2 Watter getal kom die meeste voor en wat word die getal genoem (in terme van (2)
datahantering)?
7.3 Bereken die omvang. (2)
7.4 Bereken die gemiddelde waarde van die datastel. (2)

8. Skakel die volgende afmetings om na die verlangde eenheid:

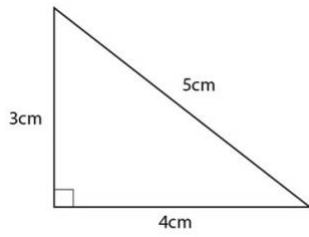8.1 85 cm = _____ mm (2)
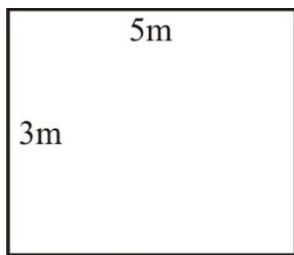8.2 8,21 km = _____m (2)
8.3 3500 mm = _____ km (2)

9. Bereken die omtrek van die volgende figure:

9.1

(2)

9.2

(2)
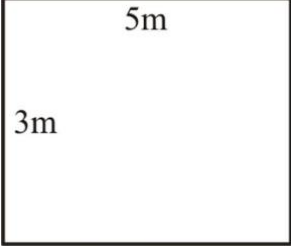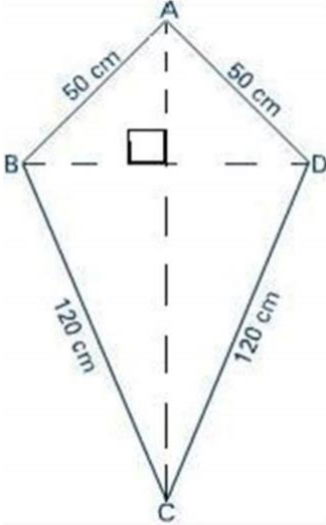
9.3
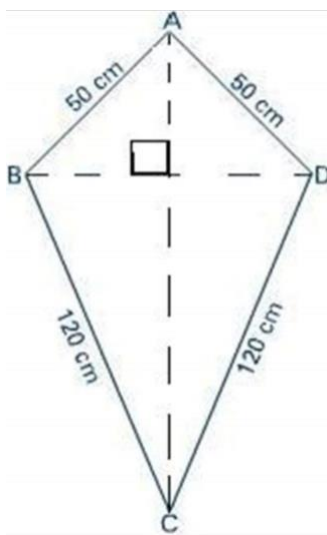
(2)

MERKRIGLYN

1.	Vereenvoudig die volgende. Toon AL die stappe.	
1.1	$12 + (10 - 8) \div 2$ $= 12 + 2 \div 2$ $= 12 + 1$ $= 13$ ✓✓	(2)
1.2	$7 - \sqrt{49} \times 10$ $= 7 + 7 \times 10$ $= 7 + 70$ $= 77$ ✓✓	(2)
1.3	$\frac{1}{2} + \frac{1}{3} - \frac{1}{4}$ $= \frac{6(1) + 4(1) - 3(1)}{12}$ $= \frac{6 + 4 - 3}{12}$ $= \frac{7}{12}$ ✓✓	(2)
2.	Rond 6,1368 af tot twee desimale plekke. 6,137 ✓✓	(2)
3.1	Bepaal 21% van R120,00 $\frac{21}{100} \times$ R120,00 $=$ R25,20 ✓✓	(2)
3.2	Skryf $\frac{5}{6}$ as 'n persentasie $= \frac{5}{6} \times 100$ $= 83,33\%$ ✓✓ NB: Volgens aanvanklike instruksie op vraestel moet dit afgerond wees tot twee desimale plekke.	(2)
4.	Skryf die getal 1 256 in woorde. Eenduisend tweehonderd ses en vyftig ✓✓	(2)
5.1	Bereken hoeveel wins Musa sal maak nadat hy een pakkie stokkielekkers verkoop het. $1 \times 30 =$ R30,00 ✓ R30,00 – R19,95 = R10,05 ✓	(2)

5.2	Bereken die waarde van A en B.
	 A = 3 x 30
	     = R90,00 ✓
	 B = R60,00 ÷ R30,00
	     = 2 packets ✓
		(4)

5.3	Bereken die totale bedrag wat Musa sal hê na 5 dae. R60 + R90 + R30 + R60 + R90 = R330,00 ✓✓	(2)

6.	Skryf die tyd neer wat deur die analooghorlosie voorgestel word.
	        b. b. c.
	
	       07:15 ✓ 10:45 ✓ 01:15 ✓ of:
	Kwart oor 7 Kwart voor 11 Kwart oor een of:
	15 min oor sewe 15 min voor 11 15 minute oor een
		(3)

7.	Gebruik die data om die volgende vrae te beantwoord. 20 25 4 27 21 12 4 8 7	
7.1	Rangskik die data van die kleinste waarde tot die grootste waarde 4 4 7 8 12 20 21 25 27 ✓✓	(2)
7.2	Watter getal kom die meeste voor en wat word die getal genoem (in terme van datahantering)? 4, modus ✓✓	(2)
7.3	Bereken die omvang. Omvang = 27 – 4 = 23 ✓✓	(2)

7.4	Bereken die gemiddelde waarde van die datastel.
	Gemiddeld = $\frac{4 + 4 + 7 + 8 + 12 + 20 + 21 + 25 + 27}{9}$
	            = $\frac{128}{9}$
	            = 14,22 ✓✓
		(2)

8.		
8.1	85 × 10 = 850 mm ✓✓	(2)
8.2	8,21 × 1 000 = 8 210 m ✓✓	(2)
8.3	3500 ÷1 000 000 = 0,0035 km ✓✓	(2)
9.1	 P = 5 + 3 + 4 = 12 cm ✓✓	(2)

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1.9.2	5m 3m P = 5 + 5 + 3 + 3 = 16 m ✓✓	(2)
1.9.3	A 50 cm 50 cm B D 120 cm 120 cm C P = 50 + 50 + 120 + 120 = 340 cm ✓✓	(2)

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Grade 11   **MATHEMATICAL LITERACY**

Baseline Assessment Task

Total: 45   **Time: 1 hour**

1.   Answer ALL the questions.
2.   Number the questions correctly according to the numbering system used in this question paper.
3.   An approved calculator (non-programmable and non-graphical), may be used unless stated otherwise.
4.   Show ALL calculations clearly.
5.   Round off ALL final answers appropriately according to the given context, unless stated otherwise.

QUESTION 1

1.1   Calculate the following.

1.1.1 $3{,}14 \times (200 - 175)^2 - 150$ Round your answer off to the nearest whole number.   (3)

1.1.2 $33\frac{1}{3}\%$ of R2 500   Round your answer off to two decimal places.   (2)

1.2   The temperature on a certain day in Bloemfontein is -2°C in the morning. During the day the temperature rise to 5°C. With how many degrees did the temperature rise?   (2)

1.3
1.3.1   Simplify the following ratio: 32 : 48.   (2)

1.3.2   Write the following as a unit ratio: 18 : 64.   (2)

1.4   It takes 6 workers 8 hours to tile a hall. How long will it take 4 workers to complete the same job?   (2)

1.5   Divide R240 in the ratio 2:3:7.   (4)

1.6   Write the following number in words: 132 354.   (2)

1.7   Meryl pays £400 into her sister's South African bank account. How much money did her sister receive if the current exchange rate is £1 = R19,29?   (2)

[20]

QUESTION 2

Moloi's family is travelling from Bloemfontein to Cape Town for a weekend. The distance between Bloemfontein and Cape Town is 1 010 km. The family is using a car with a 80 Litres (ℓ) tank capacity. The average consumption of the car 8,0 litres(ℓ)/100km and the petrol price is R14,20/ Litre (ℓ).

2.1	What is the distance of the RETURN trip from Bloemfontein to Cape Town?	(2)
2.2	How much is the price of a full tank petrol?	(2)
2.3	Mr Moloi took exactly 10 minutes breaks after every 200 km. Calculate the total duration of all the breaks for the return trip.	(2)
2.4	If the family departed from Bloemfontein at 02:45 and their trip took 10 hours and 40 minutes, what will be their arrival time in Cape Town?	(2)

[8]

QUESTION 3

17; 17; 18; 18; 18; 18; 19; 19; 19; 20; 20; 21
**The data above represents the ages of grade 12 learners at AB school.**
Calculate the followings:

3.1	Mode of the data.	(2)
3.2	Range of the data.	(2)
3.3	Mean of the data.	(3)
3.4	Median of the data.	(2)
3.5	The probability in the simplest form that a learner from the class is younger than 20 years.	(3)

[12]

QUESTION 4

4.1   In the sketch that follows, a circular pool is shown that is surrounded by a paved area.
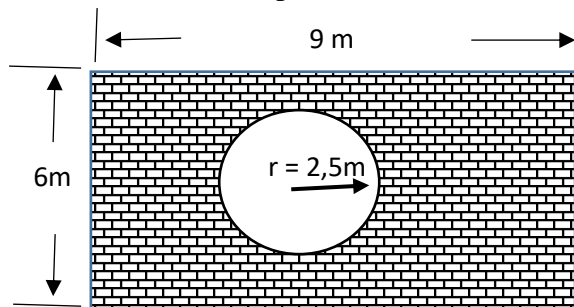
Note: Use π as 3,142.

Use the above information to answer the questions that follow.

4.1.1   Calculate the perimeter of the rectangle in the sketch.   (3)

You may use the formula: **Perimeter = 2 (length + breath)**

4.1.2   Calculate the perimeter of the circular pool.   (3)

You may use the formula: **Perimeter = 2 × π × radius**

4.1.3   Calculate the area of the (whole) rectangle.   (2)

You may use the formula: **Area = length × breath**

4.1.4   Calculate the area of the circular pool.   (2)

You may use the formula: **Area = π r^2**   **were r = radius**

4.1.5   Calculate the area of the paved area.   (2)

4.2   Do the following conversions:

4.2.1   10 cm = ………m   (2)

4.2.2   50 km = ……….cm   (2)

4.2.3   300 mm = ……..cm   (2)

[15]

Graad 11   **WISKUNDIGE GELETTERDHEID**

Basislynassesseringstaak

Totaal: 45   **Tyd: 1 uur**

Instruksies:

1. Beantwoord AL die vrae.
2. Nommer die antwoorde korrek volgens die nommeringstelsel wat in hierdie vraestel gebruik is.
3. Jy mag 'n goedgekeurde sakrekenaar (nieprogrameerbaar en niegrafies) gebruik, tensy anders aangedui.
4. Toon ALLE bewerkings duidelik.
5. Rond ALLE finale antwoorde toepaslik volgens die gegewe konteks af, tensy anders aangedui.Skryf netjies en leesbaar.

VRAAG 1

1.1   Bereken die volgende.

1.1.1 $3,14 \times (200 - 175)^2 - 150$ Rond jou antwoord af tot die naaste heelgetal.   (3)

1.1.2 $33\dfrac{1}{3}\%$ van R2 500   Rond jou antwoord af tot twee desimale plekke.   (2)

1.2   Die temperatuur op'n sekere dag in Bloemfontein is -2°C in die more. Gedurende die dag styg die temperatuur to 5°C. Met hoeveel grade het die temperatuur gestyg?   (2)

1.3

1.3.1   Vereenvoudig die volgende verhouding: 32 : 48   (2)

1.3.2   Skryf die volgende as 'n eenheidsverhouding: 18 : 64   (2)

1.4   Dit neem 6 werkers 8 ure om 'n saal se vloer te teël. Hoe lank sal dit 4 werkers neem om dieselfde taak te voltooi?   (2)

1.5   Verdeel R240 in die verhouding 2:3:7.   (4)

1.6   Skryf die volgende getal in woorde: 132 354.   (2)

1.7   Meryl betaal £400 in haar suster se Suid-Afrikaanse bankrekening. Hoeveel geld sal haar suster ontvang indien die huidige wisselkoers £1 = R19,29 is?   (2)

[20]

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VRAAG 2

Moloi se familie reis vanaf Kaapstad na Bloemfontein vir 'n naweek. Die afstand tussen Bloemfontein en Kaapstad is 1 010 km. Die familie gebruik 'n motor met 'n 80 liter (ℓ) petroltenk. Die gemiddelde petrolverbruik van die motor is 8,0 liter(ℓ)/100km en die petrolprys ten tye van die rit is R14,20/liter (ℓ).

2.1	Wat is die afstand vir die **RETOERREIS** van Bloemfontein na Kaapstad?	(2)
2.2	Wat is die prys van 'n vol tenk petrol?	(2)
2.3	Moloi het elke 200 km 'n 10 minuut breuk geneem. Bereken die aantal breuke wat Moloi geneem het vir die reis vanaf Bloemfontein na Kaapstad (slegs vir die reis in een rigring).	(2)
2.4	Indien die familie vanaf Bloemfontein vertrek het om 02:45 en hulle reis het 10 uur en 40 minute geneem, wat sal hulle aankomstyd in Kaapstad wees?	(2)

[8]

**Vraag 3**

17; 17; 18; 18; 18; 18; 19; 19; 19; 20; 20; 21

Die data hierbo toon die ouderdom van graad 12 leerders by AB skool. Bereken die volgende:

3.1	Die modus van die data.	(2)
3.2	Die omvang van die data.	(2)
3.3	Die gemiddeld van die data.	(3)
3.4	Die median van die data.	(2)
3.5	Die waarskynlikheid (in die eenvoudigste vorm) dat 'n leerder in die klas jonger as 20 jaar oud is.	(3)

[12]

VRAAG 4 [15]

4.1 In die skets wat volg word'n sirkelvormige swembad getoon wat in geleë is in 'n geplaveide area.
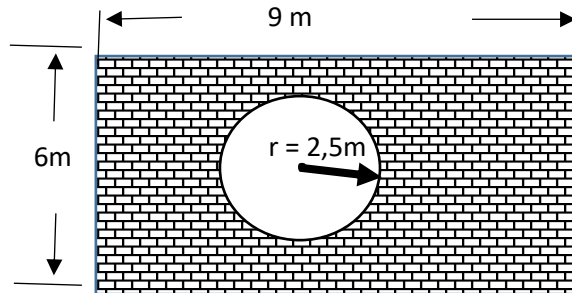
Nota: Gebruik π as 3,142 .

Gebruik die inligting wat hierbo gegee is om die volgende te bereken:

4.1.1 Bereken die omtrek van die reghoek soos getoon in die skets. (3)

Jy mag die volgende formule gebruik: **Omtrek = 2× (lengte + breedte)**

4.1.2 Bereken die omtrek van die sirkelvormige swembad: (3)

Jy mag die volgende formule gebruik: **Omtrek = 2 × π × radius**

4.1.3 Bereken die oppervlakte van die (hele) reghoekige gedeelte in die skets. (2)

Jy mag die volgende formule gebruik: **Oppervlakte = lengte × breedte**

4.1.4 Bereken die oppervlakte van die sirkelvormige swembad. (2)

Jy mag die volgende formule gebruik: **Oppervlakte = π r² waar r = radius**

4.1.5 Bereken die oppervlakte van die geplaveide gedeelte. (2)

4.2 Do the following conversions:

4.2.1 10 cm = m (1)

4.2.2 50 km = cm (1)

4.2.3 300 mm = cm (1)

[15]

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GRADE 11   BASELINE ASSESSMENT MARKING GUIDELINE

QUESTION 1 [20]		
1.1		
1.1.1	$3,14 \times 625 – 150$ ✓S $= 1\ 812,5$ ✓ CA $= 1\ 813$ ✓ CA Rounding	1 S BODMAS 1 CA 1 CA Rounding AO (3)
1.1.2	R833,33 A✓CA Rounding ✓	1 A answer 1 CA Rounding AO (2)
1.2	$5^oC – (-2^0C)$ ✓ $= 7^oC$ ✓	1 Calculation 1 A AO (2)
1.3.1	$32 : 48 = 2 : 3$ ✓✓	2 S simplification (2)
1.3.2	$18 : 64 = 1 : 3,56$ ✓	1 A (1)
1.4	12 ✓✓ A	2 A accuracy (2)
1.5	$2 + 3 + 7 = 12$ ✓ $\frac{2}{12} \times 240 = R40$ ✓ $\frac{3}{12} \times 240 = R60$ ✓ $\frac{7}{12} \times 240 = R140$ ✓	1 Adding 1 R40 1 R60 1 R140 (4)
1.6	One hundred and thirty-two thousand ✓three hundred and fifty-four ✓. Een honderd en drie-en-dertigduisend ✓ driehonderd vier-en-vyftig ✓.	1 Part 1 1 Part 2 (2)
1.7	£1 can be bought for R19,29 £400 can be bought for $400 \times 19,29$ ✓ $= R7\ 717$ ✓	1 M multiplication 1 CA answer (2)

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QUESTION 2 [8]			
2.1	$1\,010 \times 2$ ✓M $= 2\,020$ ✓ CA	1 M method 1 A answer	(2)
2.2	$80 \times R14,20$ ✓M R 1 136 ✓ CA	1 M method 1 A answer	(2)
2.3	$1\,010 \div 200 = 5,05$ ✓ 5 Breaks ✓A	1 M method 1 A answer	(2)
2.4	$02:45 + 10\,h\,40\,min$ ✓ $= 13:25$ ✓	1 M adding 1 A	(2)

QUESTION 3 [12]			
3.1	Mode = 2 18 ✓✓ A	2 A answer	(2)
3.2	Range = 21 – 17 = 4 ✓✓	2 A answer	(2)
3.3	Mean $= \dfrac{224}{12}$ ✓✓ $= 18,67$ ✓	1 numerator 1 denominator 1 CA	(3)
3.4	Median $= \dfrac{18+19}{2}$ $= 18,5$	1 M 1 A	(2)
3.5	Probability $= \dfrac{9}{12}$ ✓✓ $= 0,75$ ✓	1 numerator 1 denominator 1 CA	(3)

QUESTION 4 [15]			
4.1.1	P = 2 (9 m + **6 m)** ✓✓ **= 30 m** ✓	1 RT 1 SF 1 CA answer	(3)
4.1.2	$P = 2 \times 3,142 \times 2,5$ ✓✓ $= 15,71$ m ✓	1 RT 1 SF 1 CA answer	(3)

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	NOTE: According to initial instruction it must be rounded to two decimal places		
4.1.3	$A = 6 \times 9$ ✓ $= 54$ m ✓	1 SF 1 CA answer	(2)
4.1.4	$A = 3,14 \times 2,5^2$ ✓ $= 19,63$ m^2 ✓ NOTE: Must be rounded to TWO decimal places according to initial instruction	1 SF 1 CA	(2)
4.1.5	$A = 54 - 19,63$ ✓ $= 34,38$ m^2 ✓	1 M Subtraction 1 CA answer	(2)
4.2			
4.2.1	0,1 m ✓	1 A	(1)
4.2.2	0,0005 cm ✓	1 A	(1)
4.2.3	30 cm ✓	1 A	(1)

TOTAL: 45

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GRADE 12 MATHEMATICAL LITERACY: BASELINE ASSESSMENT

Total: 40 marks   **Duration: 1 h**

Instructions:

- Answer all questions to the best of your ability.
- Show all your calculations where necessary. This is very important. Even if you are not sure, show your teacher how you think.
- Round answers off to two decimal places unless stated otherwise.

QUESTION 1 [11 MARKS]

1.1	Convert 500 g to kg.	(1)
1.2	Convert 1000 km to m.	(1)
1.3	Convert 1,65 ton to kg.	(1)
1.4	Convert 1,5 litre to millilitre.	(1)
1.5	Convert 50 m to cm.	(1)
1.6	If 1 inch is 2,54 cm, convert 12,5 cm to inches.	(1)
1.7	If 1 cup is 250 ml, how many cups will 1 250 ml be?	(1)
1.8	If 3 g of flour is 5 ml, how many ml will 10 g be?	(1)
1.9	Round the following number off to two decimal places: 135,2128	(1)
1.10	Round the following number off to the nearest whole number: 250,62	(1)
1.11	Round the following number off to the nearest ten: 123,84.	(1)

QUESTION 2 [6 MARKS]

2.1	If an athlete passed the 5 km mark in a race after 19 min 58 seconds and the 10 km mark after 37 min 25 seconds, how long did it take him to complete the second 5 km?	(1)
2.2	Convert the following time in hours to a time in hours and minutes: 3,5 hours	(2)
2.3	Andiswa reads the time on the following clock in the morning. Help Andiswa to write the time that she reads down. Give your answer in 24hour format **and** describe the time in words. You do not have to specify the seconds.	(2)

2.4   Write the following time in 24 hour format: 5:10 pm.   (1)

QUESTION 3 [10 MARKS]

Joan visited Frank's Supermarket and received the following till slip (a till slip is an example of a financial document). Study the till slip and answer the questions that follows:

```
FRANK'S SUPERMARKET
         Welcome to our store!
           A9 Daven Avenue
        Beacon Bay, East London
          Tel No.:  043 711 11**
        VAT Reg. No.:  ****2216
     Customer Helpline:  0860 00* 00*

        Last day for full refund is
     12/12/2013 except for SALE items
# Organic Carrots 1 kg          R   14,99
White Huletts Sugar
2,5 kg @ R23,95
Less promotion R2,00            R   21,95
Value Condensed Milk
@ R16,95
Less promotion R1,00            R 159,50
# 1 ℓ Clover Milk               R    9,95
# Sweetcorn 135 g               R   19,95
# Rosa Tomatoes 400 g           R   14,99
# Red Salad Onions 10 g         R   14,99
Sliced Cooked Ham 250 g         R   46,99
Dove Fresh Touch Soap           R    8,29
# Cabbage                       R    6,99

TOTAL (including VAT)               A
TOTAL (excluding VAT)          R289,52
VAT                            R29,07
TOTAL DUE (rounded off)            B
AMOUNT TENDERED                    C
CHANGE                             D

# Non-VAT Items
12-10-2013         16:45       Nondumiso
```

3.1   Name the non-vegetable item that is exempted from VAT.   (1)

3.2   Calculate the missing value A on the till slip.   (2)

3.3   Determine the number of tins of "Value" condensed milk bought.   (2)

3.4   On what date and time did Joan visit Frank's Supermarket?   (2)

3.5   Calculate the value of B. Round your answer down to the nearest five cents (5c).   (2)

3.6   Joan paid for the items with one R200 note and two R100 notes. Calculate the value of   (1)
C on the till slip.

QUESTION 4 [9 MARKS]

The following are the heights of girls in the grade 12 A class of Highschool XYZ (all
heights are given in metre):

1,45	1,67	1,53	1,68	1,57	1,74	1,59
1,61	1,75	1,62	1,64	1,64	1,82	1,66
1,66	1,75	1,48	1,67	1,78	1,55	1,69
1,58	1,64	1,61				

4.1   Arrange the data in ascending order.   (2)

4.2   Determine the mode of the set of data.   (1)

4.3   Determine the median of the set of data.   (1)

4.4   Calculate the mean height of the girls in the grade 12 A class.   (3)

4.5   Is the data discrete or continuous? Give a reason for your answer.   (2)

QUESTION 5 [4 MARKS]

Mrs Visagie wants to employ a company that will maintain her yard by cutting the
grass. She obtains quotations from two companies, company A and company B. On
Annexure A you will find a graph showing the cost that companies A and B respectively
charge for working a certain amount of hours. Study the graph and answer the
questions that follow:

5.1   Ms Visagie estimates it will take 3 hours to cut her lawn. Which company will be   (1)
cheapest in this case?

5.2   Company A and B will charge the same amount for a certain number of hours worked.   (1)
What is this number of hours?

5.3   Ms Visagie's neighbour wants to make us of company B. What will company B charge   (1)
if it takes 1,5 hours to cut her grass?

5.4   Write down a general equation (formula) to calculate the cost for Company A in the   (1)
format: Cost =

ANNEXURE A: MAINTENANCE COSTS FOR COMPANIES A AND C
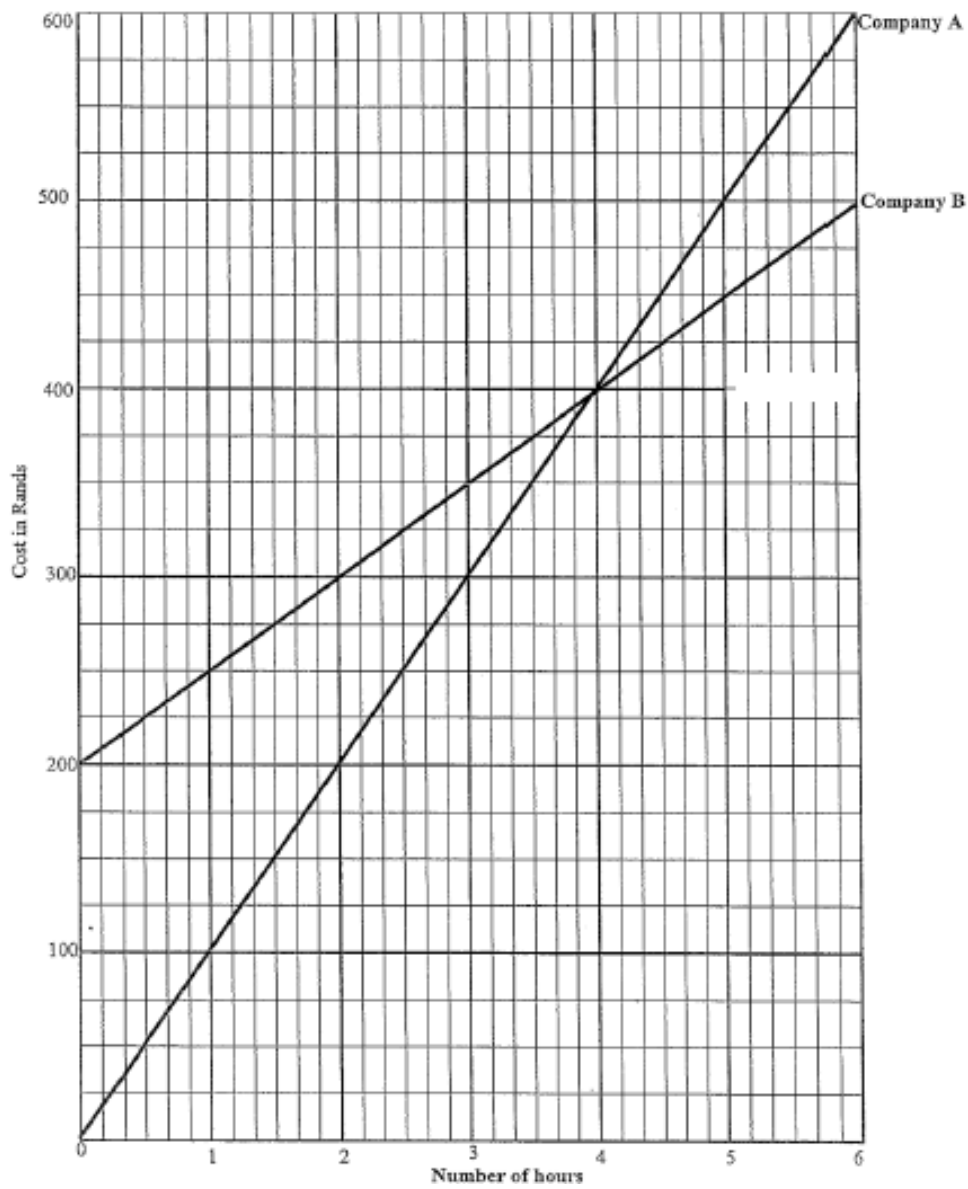
GRAAD 12 WISKUNDIGE GELETTERDHEID: Basislynassessering

Totaal: 40 punte   Tyd: 1 h

Instruksies:

- Beantwoord alle vrae so goed as wat vir jou moontlik is.
- Wys al jou berekeninge waar nodig. Dit is baie belangrik. Selfs al is jy nie seker nie, wys jou onderwyser hoe jy dink.
- Rond jou antwoorde af tot twee desimale plekke behalwe waar anders aangedui.

VRAAG 1 [11 PUNTE]

1.1   Herlei 500 g na kg.   (1)

1.2   Herlei 1000 km na m.   (1)

1.3   Herlei 1,65 ton na kg.   (1)

1.4   Herlei 1,5 liter na milliliter.   (1)

1.5   Herlei 50 m na cm.   (1)

1.6   Indien 1 duim gelyk is aan 2,54 cm, herlei 12,5 cm na duime.   (1)

1.7   Indien 1 koppie gelyk is aan 250 ml, hoveel koppies sal 1 250 ml wees?   (1)

1.8   Indien 3 g meel gelyk is aan 5 ml, hoeveel ml sal 10 g wees?   (1)

1.9   Rond die volgende getal af to twee desimale plekke: 135,2128   (1)

1.10   Rond die volgende getal af tot die naaste heelgetal: 250,62   (1)

1.11   Rond die volgende getal af tot die naaste tien: 123,84.   (1)

VRAAG 2 [6 PUNTE]

2.1   Indien 'n atleet die 5 km merk in 'n resies na 19 min 58 sekondes verby gaan en die   (1)
          10 km merk na 37 min 25 sekondes, hoe lank het dit hom geneem om die tweede 5
          km tevoltooi?

2.2   Herlei die volgende tyd in ure na 'n tyd in minute: 3,5 ure   (2)

2.3   Andiswa lees die tyd op die horlosie wat volg in die môre. Help Andiswa om die tyd   (2)
          neer te skryf wat sy lees. Gee jou antwoord in 24 uur-formaat asook in woorde. Jy hoef
          nie die sekondes te spesifiseer nie.

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2.4   Skryf die volgende tyd in 24 uur-formaat: 5:10 pm.   (1)

VRAAG 3 [10 PUNTE]

Joan het Frank se Supermark besoek en die volgende kasregisterstrokie ontvang ('n kasregisterstrokie is 'n voorbeeld van 'n finansiële dokument). Bestudeer die kasregisterstrokie en beantwoord die vrae wat volg:

3.1   Noem die item wat nie groente is nie wat van BTW vrygestel is.   (1)

3.2   Bereken die waarde van A op die kasregisterstrokie.   (2)

3.3   Bepaal die aantal blikkies "Value" kondensmelk wat gekoop is.   (2)

3.4   Op watter datum en tyd het Joan Frank se Supermark besoek?   (2)

3.5   Bereken die waarde van B. Rond jou antwoord af tot die naaste vyf sent (5c).   (2)

3.6   Joan het vir die items betaal met een R200 noot en twee R100 note. Bereken die   (1)
       waarde van C op die kasregisterstrokie.

VRAAG 4 [9 PUNTE]

Die volgende is die lengtes van meisies in die graad 12 A-klas van Hoërskool XYZ (alle
hoogtes word gegee in meter):

1,45	1,67	1,53	1,68	1,57	1,74	1,59
1,61	1,75	1,62	1,64	1,64	1,82	1,66
1,66	1,75	1,48	1,67	1,78	1,55	1,69
1,58	1,64	1,61				

4.1   Rangskik die data in stygende orde.   (2)

4.2   Bepaal die modus van die datastel.   (1)

4.3   Bepaal die mediaan van die datastel.   (1)

4.4   Bereken die gemiddelde lengte van die meisies in die graad 12 A-klas.   (3)

4.5   Is die data diskreet of kontinu? Gee 'n rede vir jou antwoord.   (2)

VRAAG 5 [4 PUNTE]

Me Visagie wil 'n maatskappy aanstel om haar erf in stand te hou deur die gras te sny.
Sy kry kwotasies vanaf twee maatskappye, maatskappy A en maatskappy B. Op Bylae
A sal jy 'n grafiek vind wat die kostes aandui wat maatskappye A en B respektiewelik
vra indien daar gewerk word vir 'n sekere aantal ure. Bestudeer die grafiek
enbeantwoord die vrae wat volg:

5.1   Me Visagie beraam dat dit 3 ure sal neem om haar gras te sny. Watter maatskappy sal   (1)
       die goedkoopste in hierdie geval wees?

5.2   Maatskappy A en B sal dieselfde hoeveelheid vra indien 'n sekere aantal ure gewerk   (1)
       word. Wat is hierdie aantal ure?

5.3   Me Visagie se buurvrou wil gebruik maak van maatskappy B. Wat sal maatskappy B vra   (1)
       indien dit 1,5 uur sal neem om die buurvrou se gras te sny?

5.4   Skryf 'n algemene vergelyking (formule) om die koste te bereken vir Maatskappy A in   (1)
       die formaat: Koste =

BYLAE A: ONDERHOUDSKOSTE VAN MAATSKAPPYE A EN B
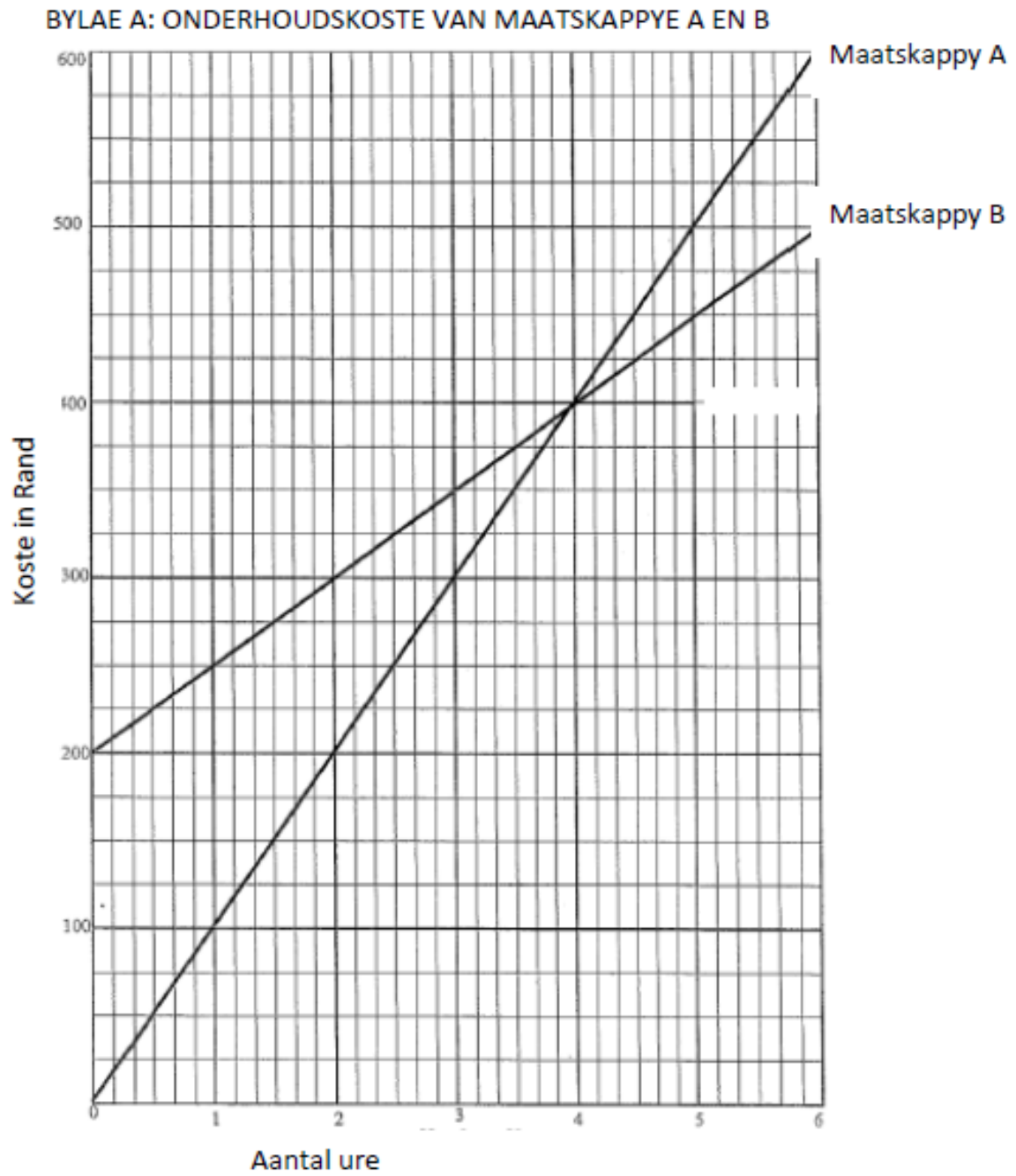
MATHEMATICAL LITERACY: Baseline assessment for Term 1, 2016

MEMORANDUM AND TEACHING NOTES

Total of test: 40 marks

	ANSWER	M	TEACHING AND LEARNING NOTES
	Question 1 [11 marks]		The focus in question 1 is on conversions and rounding, as well as working with ratios. Take note: In term 1 of grade 12 we want learners to be confident with conversions – calculating area, perimeter, volume etc. will be done in term 2.
1.1	0,5 kg ✓ (no penalty if unit is not there)	(1)	Learners must be able to do it from memory.
1.2	1 000 000 m✓ (no penalty if unit is not there)	(1)	Some learners think that because it is already big, it must be divided with 1000.
1.3	1 650 kg ✓ (no penalty if unit is not there)	(1)	Learners must already know that 1000 ton is 1 kg
1.4	1 500 ml ✓ (no penalty if unit is not there)	(1)	Learners must convert from memory.
1.5	5 000 cm ✓ (no penalty if unit is not there)	(1)	Learners must convert from memory.
1.6	1 Inch is 2,54 cm ? is 12,5 cm ÷ 12,5 x 1 ÷2,54 Keep inches together (on top of each other) and cm together = 4,92 cm ✓ (no penalty for rounding of unit) Or another method: Always begin with what you have: We have cm: 2,54 cm is 1 inch ÷ 12,5 cm is ? inch So: 12,5 x 1 ÷ 2,54 = 4,92 cm	(1)	For Imperial system the conversion factor must be given. The learners then work with it as they work with ratios. Teaching tip: see the method followed in this memo or get learners to follow a method.

1.7	If 1 cup is 250 ml
	   ? cup is 1 250 ml be?
	        1 250 x 1 ÷ 250 so, $\frac{1\,250\,ml}{250\,ml}$ = 5 cups ✓
		(1)	Application of ratio. Help learners by teaching them a method that they are comfortable with.

1.8	If 3 g flour is 5 ml, how many ml will 10 g be? 3 g of flour is 5 ml 10 g of flour is 10 x 5 ÷3 = 15,67 ml	(1)	Application of ratio. Help learners by teaching them a method that they are comfortable with.

1.9	135,21 ✓	(1)	Take note: the correct terminology is 2 decimal places not 2 decimal numbers.
1.10	251 ✓	(1)	Many teachers neglect to explain this in lower grades. We will never say to the nearest "one" (like to the nearest 10, 100, 1000), but this is what is implied.
1.11	120 ✓	(1)	Many teachers neglect to explain this in lower grades. We can say 123 is between 120 and 130, and 123 is closer to 120. Remember place value: Hundreds Tens Ones 1 2 3
	Question 2 [6 marks]		All of the aspects regarding time calculations should be known to learners. The focus in grade 12 is actually on application (also to subtract something like 10 min 50 seconds from 20 minutes 20 seconds – in other words to "borrow" 1 minute which is actually 60 seconds.
2.1	37 min 58 seconds - <u>19 min 25 seconds</u> 18 min 33 seconds ✓	(1)	Learners must know to "sift" out the necessary information. The 5 km and 10 km is not part of the calculation. The learners must further be aware that minutes are subtracted from min and seconds from seconds. Focus in grade on subtracting times where you have to "borrow" e.g. 10 min 5 sec – 4 min 20 sec.
2.2	3 hours are 3 x 60 = 180 min (knowing that 1 hour is 60 min ✓) 0,5 hour is 0,5 x 60 = 30 min Total 180 min + 30 min = 210 min ✓	(2)	There are 60 minutes in 1 hour – learners must memorise this.
2.3	In 24 hour format: 01:49 ✓ (NOT : 01h49 or 1 hour 49 minutes) In words: 11 minutes to 2 ✓ (NOT: 49 minutes past 1)	(2)	Notation is very important
2.4	17:10 ✓ (NOT: 05:10, 17h10 etc).	(1)	Emphasise: pm is after 12:00
	Question 3 [10 marks]		The till slip is in this baseline assessment because although it is done in grade 10, it did appear in the past in the grade 12 November papers (see paper 1 Nov 2014). ALL financial docs

			can be examined in grade 12. Teachers must focus on teaching skills to interpret and understand financial documents.
3.1	Milk ✓	(1)	• Learners must know what is a non-vegetable – although it does not stand in the math lit policy doc, it should be common sense. • Learners must know what "exempted from" mean. • Learners must see on the till slip that where # indicated items do not include VAT
3.2	14,99 + 21,95 + 159,50 + 9,95 + 19,95 + 14,99 +14,99 + 46,99 + 8,29 + 6,99 ✓ = 318,59 ✓ or: 289,52 + 29,07 ✓ = 318,59 ✓	(2)	Either the learner can add all the values or subtract total excluding VAT and VAT. Promote the idea the learners must use their own methods.
3.3	$\frac{159,50}{16,95}$ = 9,4 tins, but you cannot buy 9,4 tins – should it be rounded up or down? In this case there was a discount worked in, so let us round it up and see what happens: 16,95 x 10 = 169,50 Discount for 10 tins will be 10 x R1 = R10 R169,50 – R10 = R159,50 - this is the value on the till slip So, the answer is 10 tins ✓✓.	(2)	Learners should get plenty of opportunities to figure things out for themselves. Allow them opportunities to do so.
3.4	12/10/2013 ✓ 16:45 ✓	(2)	Learners must be able to recognise information by the format it is written in.
3.5	289,52 + 29,07 = 318,59 ✓ which is 318,55 ✓	(2)	In practice, Supermarkets always round off to the nearest 5 cent because we don't use 1 c and 2 c coins any more. Also, the total is always rounded down – you cannot pay more than you owe. Skill: understand what it means to round off to the nearest 5 cent (do also with learners to the nearest cent).
3.6	Amount tendered: 1 x R200 + 2 x R100 = R400 ✓	(1)	Maybe not in the CAPS doc, but something practical that everybody must be able to do. Understanding the language: in this case – what is the meaning of the word "tendered"?

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	Question 4 [9]		The concepts in this question have been dealt with from very low grades. Learners must know them by grade 12:
	The following are the heights of girls in the grade 12 A class of Highschool XYZ (all heights are given in metre): See table below		

1,45	1,67	1,53	1,68	1,57	1,74	1,59
1,61	1,75	1,62	1,64	1,64	1,82	1,66
1,66	1,75	1,48	1,67	1,78	1,55	1,69
1,58	1,64	1,61				

| 4.1 | 1,45; 1,48; 1,53; 1,55; 1,57; 1,58; 1,59; 1,61; 1,61; 1,62; 1,64; 1,64; 1,64; 1,66; 1,66; 1,67; 1,67; 1,68; 1,60; 1,74; 1,75; 1,75; 1,78; 1,82 ✓✓ | (2) | Some learners have problems with decimal numbers, although they can work well with whole numbers. This question will show this.
 Remind learners to always count the values in the table and in their arrangement so that they can be sure all is there.
 I like to teach learners to arrange data using a stem-and-leaf plot in this case: |

		Ordering:
1,4	5 8	1,45; 1,48
1,5	3 7 9 5 8	1,53; 1,55; 1,57; 1,58; 1,59
1,6	7 8 1 2 4 4 6 6 7 9 4 1	1,61 etc
1,7	4 5 5 8	1,74 etc
1,8	2	1,82

| 4.2 | 1,64 ✓ | (1) | |

4.3	1,64 ✓	(1)	If the values are the same they don't really have to add and divide by 2, but if you think it is necessary to teach it like so then do it like that.
4.4	Mean = $\dfrac{39{,}38 ✓}{24 ✓}$ = 1,64 m ✓	(3)	
4.5	Discrete ✓ The data take particular values ✓ (NOT: it is not continuous)	(2)	Teachers like to teach learners that data is discrete because it is whole numbers. In this case it will not work.
	Question 5 [4 marks]		
			Skills to work with graphs are important since we use graphing skills also for topic such as displaying data.
5.1	Company A ✓	(1)	Learners must ensure that they mention the correct legend.
5.2	4 hours ✓	(1)	Learners must understand what is the break-even point.
5.3	R275 ✓.	(1)	Learners must understand the scale and read off values correctly.
5.4	Cost = 100n where n is the number of hours worked.	(1)	Learners must be able to write formulae based on graphs. The variable must be specified

Analysis of baseline assessment								
Name of School:								
Name of teacher:								
	Ave Q1	Ave Q2	Ave Q3	Ave Q4	Ave Q5	Overall % learners passing	Overall % learners failing	Overall ave
Learner 1								
Learner 2								
Learner 3								

Mathematical Literacy baseline assessment 2021