



FLCM December1 2015

**FOUNDATIONAL MATHEMATICAL LITERACY  
SUMMATIVE ASSESSMENT**

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**TIME TO COMPLETE: 2½ HOURS**

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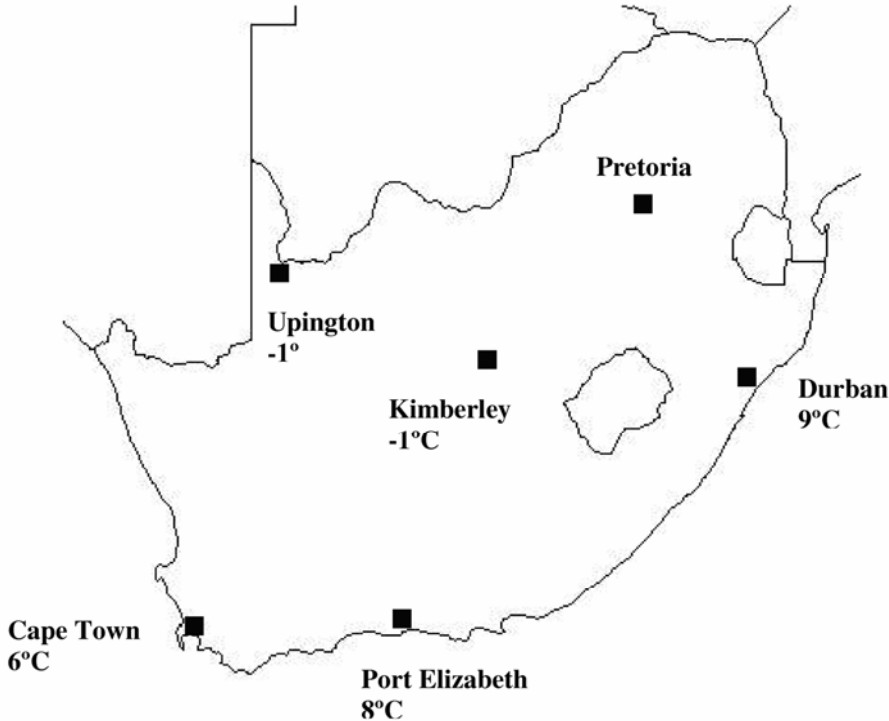
**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. Please make sure you have turned off your cell phone and have placed it under your seat, together with any books, notes or other material in your possession. Your pockets must also be empty.
2. You may have your Examination Entry Letter, your identity document and a pen or pencil and eraser on your desk.
3. If you are writing Mathematical Literacy, you may have a basic calculator, i.e. non-programmable. You may **not** use a cell phone as a calculator.
4. When the chief invigilator instructs you, take out the Answer Sheet that is placed inside your Examination Booklet.
5. Check that the learner code on your Answer Sheet matches the learner code on your Examination Entry Letter.
6. You may write on the Examination Booklet but only in pencil so that your answers can be erased. Make use of the spare paper provided for any additional calculations.  
NB: all spare paper used in calculations must be returned to the invigilator at the conclusion of the examination session.
7. This examination session is 2½ hours, i.e. 2 hours and 30 minutes.
8. You may not leave the examination before the end of the session.
9. When answering each question, select the option from the four answers provided that you believe is the correct answer by filling in the selected circle.
10. Use an HB pencil only and ensure that you fill in the circle completely.
11. Make sure that you colour in dark enough that the computer can read your answer.
12. Take note of the illustrations on your Answer Sheet showing the correct way to complete the Answer Sheet.
13. Do not fill in more than one option in your response, because no option will then be considered in marking.

### Question 1

Study the weather map showing temperatures in some of the cities of South Africa.

Find the difference in temperature between Cape Town and Kimberley.



- A 7°C
  - B 5°C
  - C -7°C
  - D -5°C
- 

### Question 2

A group of miners travels in a lift from ground level to a depth of 1 950 m below the surface. The lift then takes them up to another level, travelling for 300 m. They make a second stop after travelling another 150 m towards the surface. They then get out of the lift.

At what depth do they get out of the lift?

- A 1 500 m
  - B 1 800 m
  - C 2 100 m
  - D 2 400 m
-

**Question 3**

The analogue clock face below shows the time in the morning.

What would the digital display be?



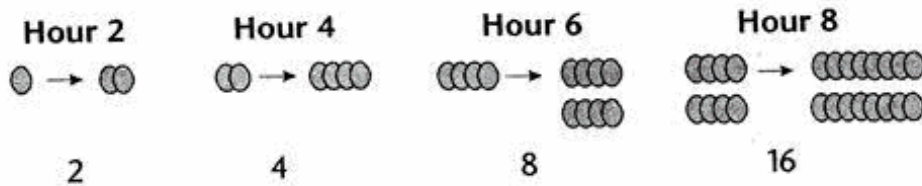
- A 22:10
  - B 10:20
  - C 22:20
  - D 10:10
- 

**Question 4**

Human cells divide every 2 hours.

How many cells will there be after 12 hours, expressed in its exponential form?

Choose your answer from the options shown below.



Hour 2	Hour 4	Hour 6	Hour 8	Hour 12
2	$2^2$	$2^3$	$2^4$	

**Option A**

32

**Option B**

64

**Option C**

$2^5$

**Option D**

$2^6$

- A Option A
  - B Option B
  - C Option C
  - D Option D
-

**Question 5**

Floor tiles are packed in boxes of 12. Each box cost R132,00 and boxes cannot be split. Onika needs 99 tiles.

How much will Onika pay for the tiles she needs?

- A R1 188
  - B R1 056
  - C R1 584
  - D R1 089
- 

**Question 6**

Tshidi took part in a swimming competition. The standing record for 100 metres freestyle was given as 3,48 seconds. She broke the record with a time of 3,42 seconds.

What was her average time over a distance of 10 metres?

- A 0,342 seconds
  - B 0,06 seconds
  - C 0,006 seconds
  - D 0,0342 seconds
- 

**Question 7**

Maria is catering for a function. She bought 4 bottles of orange juice concentrate, each containing 5 litres. When she mixes it with water she uses the ratio 1 part orange to 7 parts water.

How many litres of orange juice will she get once she has mixed all the juice?

- A 160 litres
  - B 28 litres
  - C 40 litres
  - D 140 litres
- 

**Question 8**

Victoria is returning from Australia and has U\$ 9 584 dollars to change back to rand. The exchange rate at the time is 1AU\$ = R9,2

How much money, in rand, will she receive if the bank takes a 5% commission?

- A R83 764,16
  - B R92 581,44
  - C R88 177,80
  - D R88 172,80
-

**Question 9**

In a test at school, the teacher asked her class to work out the answer to the following sum: two-fifths + three-eighths.

What is the correct answer?

A	B	C	D
$\frac{31}{40}$	$\frac{5}{40}$	$\frac{16}{15}$	$\frac{5}{13}$

- A Option A
  - B Option B
  - C Option C
  - D Option D
- 

**Question 10**

The Mr Soccer Sports Shop sells Jabulani soccer balls at R699,00 each.

If the ball loses its value by 5% each year, what will the selling price be in four years' time?

- A R559,20
  - B R599,31
  - C R569,34
  - D R679,00
-

**Question 11**

Below is the payslip for Ms R Matjila for the month of October.

What is the Nett Pay that Ms Matjila receives?

PALALA PRIMARY SCHOOL		PAY DATE: 23 October	
Pay slip no: 22	Employee Name and ID number Mrs R. Matjila 8712040071081	Employee code: 23MAT	
Bank Account no: 7014358392015	Date of birth: 1987 12 04	Position held: Teacher Grade 3	
Tax Reference no: ZA 1758135	Address: 9 William Road, Booysens, Johannesburg		
<b>Earnings</b>	<b>Amount</b>	<b>Deductions</b>	<b>Amount</b>
Basic Salary	13 203.38	PAY	2 170.43
		UIF	116.62
		PENSION	990.25
		UNION	35.00
		Total Deductions	?
		Nett Pay	?

- A R3 312,30
  - B R13 203,38
  - C R9 891,08
  - D R16 515,68
- 

**Question 12**

The table below shows the balance sheet of a small business during Jan, Feb and March.

What is the balance at the end of March?

	Jan	Feb	Mar
Balance at 1 <sup>st</sup> of month	R1 100	R1 397	-R543
Profit or loss	R297	-R1 950	-R613
Balance at month end	R1 397	-R543	

- A - R70
  - B R1 156
  - C - R1 156
  - D R70
-

**Question 13**

A factory worker is paid R215,50 per day. He works for eight weeks, including weekends, with no extra pay over weekends. The factory owner gives a bonus of R350 every four weeks.

How much does he earn at the end of eight weeks?

- A R12 768
  - B R8 970
  - C R9 320
  - D R12 418
- 

**Question 14**

Thabo sells pens and receives a commission of 80c for each pen that he sells.

How many pens must he sell to earn a commission of R20,80?

- A 20
  - B 21
  - C 25
  - D 26
- 

**Question 15**

Alex bought a new computer and printer costing R7 999 on hire purchase. He paid a deposit of R825 and was charged 19% p.a. simple interest on the balance.

He paid off his account, in equal monthly instalments, over 18 months.

How much did Alex pay per month?

- A R537,53
  - B R780,17
  - C R474,28
  - D R528,82
- 

**Question 16**

Kitson's electricity meter is read at the end of each month. His readings for three months are as follows:

January: 6 990 units

February: 7 346 units

March: 7 762 units

If each unit of electricity costs 93 cents, calculate the cost of Kitson's electricity usage for February and March.

- A R386,88
  - B R834,62
  - C R331,08
  - D R717,96
-

**Question 17**

Muhau earns R8 250 per month. Her deductions for tax, pension and medical aid are 42% of her monthly earnings.

How much does Muhau have left after these deductions?

- A R3 465
  - B R4 785
  - C R4 200
  - D R4 050
- 

**Question 18**

Ernest takes the Johannesburg-Port Elizabeth train to visit his mother who lives in Cradock.

How long does the journey take from the Johannesburg station to the Cradock station?

<b>Tourist Class Route   JNB » PE » JNB (Running)</b>		
<b>Johannesburg » Port Elizabeth</b>		
<b>Days running</b>	<b>Wednesday / Friday / Sunday</b>	
<b>Train Station</b>	<b>Arrival</b>	<b>Departure</b>
<b>Johannesburg</b>		13:15 day 1
Germiston	13:30 day 1	13:50 day 1
Vereeniging	14:45 day 1	14:55 day 1
Kroonstad	17:15 day 1	17:25 day 1
Virginia	18:18 day 1	18:25 day 1
Bloemfontein	20:20 day 1	20:30 day 1
Springfontein	23:00 day 1	23:15 day 1
Nouport	02:30 day 2	02:35 day 2
Rosmead	03:20 day 2	03:30 day 2
Cradock	04:35 day 2	04:45 day 2
Cookhouse	05:45 day 2	06:00 day 2
Allicedale	07:15 day 2	07:25 day 2
<b>Port Elizabeth</b>	09:15 day 2	
<b>Month</b>	<b>October</b>	<b>November</b>
<b>Fares</b>	R 330	R 330

Fares are per adult single fare / kids 0-9 half price fare

- A 15 hr 30 min
  - B 8 hr 50 min
  - C 15 hr 20 min
  - D 8 hr 40 min
-



**Question 19**

Johannes paid an amount of R4 250 for a fridge and a stove together. The stove costs R325,50 more than the fridge.

What is the price of the fridge?

- A R2 287,75
  - B R2 450,50
  - C R1 962,25
  - D R1 799,50
- 

**Question 20**

A plasma television, marked at a cash price of R7 500, can be bought on hire purchase. The hire-purchase contract is made up of a deposit of R3 125 and five equal monthly instalments of R1 250.

By what percentage is the hire purchase price more than the marked cash price?

- A 58%
  - B 80%
  - C 20%
  - D 25%
- 

**Question 21**

Thato has a small construction business in Thembisa. He is required to build a wall.

There are two ways to buy the bricks needed to build the wall:

(A) one by one, (B) a load of 1 000 or a combination of (A) and (B).

One brick cost R5,10. A load of 1 000 bricks costs R4 999,00.

Thato needs 5 150 bricks to build the wall. Calculate the total cost of bricks if he decides to use a combination of (A) and (B).

- A R26 265,00
  - B R25 494,90
  - C R25 760,00
  - D R24 995,00
-

**Question 22**

The cash price for a stove is R1 500. Debbie bought the stove on credit. She paid R150 deposit plus R76,25 per month for 30 months.

How much more, over and above the cash price, did she pay for her stove?

- A R787,50
  - B R1 395,00
  - C R1 245,00
  - D R937,50
- 

**Question 23**

Study the cellphone rates and usage for Phindulo as shown below.

Phindulo is paying the following rates for her cell phone with the Matuma Company:

<b>MATUMA CELL COMPANY</b>		
	Peak time (Rand per minute)	Off peak time (Rand per minute)
Calls to phone of same network	R1,72	R0,90
Calls to phone of other network	R2,30	R1,05
Calls to landline	R1,72	R0,90

Her bill this month shows she used the phone for the following amounts of time:

	Peak time (Rand per minute)	Off peak time (Rand per minute)
Calls to phone of same network	25 minutes	30 minutes
Calls to phone of other network	6 minutes	15 minutes
Calls to landline	3 minutes	13 minutes

How much will her total bill be?

- A R82,80
  - B R256,37
  - C R116,41
  - D R8,69
-

**Question 24**

Rob compares the cell phone charges of 2 cell phone networks on 120 calls in a month. He does a break-down as follows.

- 40% of calls made during off peak time.
- 35% of calls made during peak time.
- 25% of calls made during happy hour.

What is the difference in the charges between the two networks for the 120 calls?

<b>TIMES OF CALLS</b>	<b>CELLDOM</b>	<b>VODACELL</b>
<b>OFFPEAK</b>  Mon – Fri (20h00 – 07h00) Fri 20h00 – Monday 07h00	R1,30	R1,45
<b>PEAK</b>  Mon – Fri (07h01 – 18h59)	R3,85	R3,60
<b>HAPPY HOUR</b>  Mon – Fri (19h00 – 19h59)	R1,65	R1,70

- A R1,80
  - B R1,50
  - C R0,45
  - D R0,06
- 

**Question 25**

Joe decides to buy a new car. He puts down 20% deposit on a car advertised at R100 500,00 and pays off the balance over 60 months at R1 799,99 per month.

How much does he pay for the car in total?

- A R120 600,00
  - B R122 399,99
  - C R107 999,40
  - D R128 099,40
-

**Question 26**

Palesa earns R18 000 gross income per month. Use the table shown below to answer the following question.

How much will she pay in annual tax for the year?

<b>STATUTORY RATES OF TAX</b>		
<b>Rates applicable to individuals</b>		
Taxable Income Rates of Tax		
0	- 132 000	18% of every R1
132 001	- 210 000	23 760 +25% of the amount over 132 000
210 001	- 290 000	43 260 + 30% of the amount over 210 000
290 001	- 410 000	67 260 + 35% of the amount over 290 000
410 001	- 525 000	109 260 + 38% of the amount over 410 000
525 001	and over	152 960 + 40% of the amount over 525 000

- A R64 800
  - B R45 060
  - C R43 260
  - D R45 360
-

**Question 27**

The learners in the Numeracy class at Mtombeni Centre achieved the following marks in their test.

44 46 38 40 42 48 42 54 40 44 46 44

Which of the following statements is true?

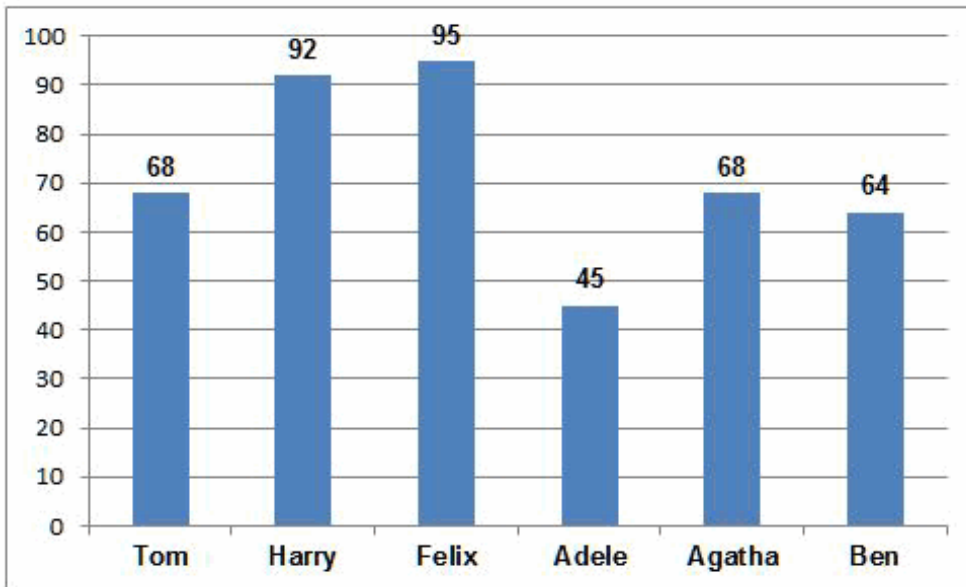
- Option A**     The mean of all marks is 43
- Option B**     The median of all marks is 42
- Option C**     The mode of all marks is 44
- Option D**     The range of all marks is 14

- A Option A
  - B Option B
  - C Option C
  - D Option D
-

**Question 28**

The chart below shows the test scores for six students.

Determine the mode of this data.



- A 68
  - B 50
  - C 34
  - D 72
-

**Question 29**

Maria and Cebo have moved to a new home in Gugulethu. There are 4 shops nearby and they want to find out which shop is the cheapest to buy their groceries. They drew up the following table of the prices of the main food items they would need to buy.

Which shop will be the cheapest for them to buy their main food items?

Items	Quick Spaza	Super Buy	Tom's Market	Cheap Shop
White Bread	R9,00	R8,50	R7,50	R8,75
6 Eggs	R7,25	R6,95	R7,50	R6,50
1 litre Milk	R9,25	R10,49	R9,00	R9,50
2 kg Sugar	R13,99	R14,00	R13,50	R14,50
100 Teabags	R14,80	R15,25	R15,00	R12,50
425 g Coffee	R36,00	R29,99	R40,00	R39,90
1 kg Potatoes	R6,00	R5,25	R6,50	R6,25
5 kg Mealie meal	R14,00	R13,90	R14,00	R13,50
1 kg Meat	R35,00	R35,85	R39,90	R38,00
<b>TOTAL</b>				

- A Quick Spaza
  - B Tom`s Market
  - C Cheap Shop
  - D Super Buy
-

**Question 30**

Study the weather details for Johannesburg.

Which day has a forecast with the most clouds?



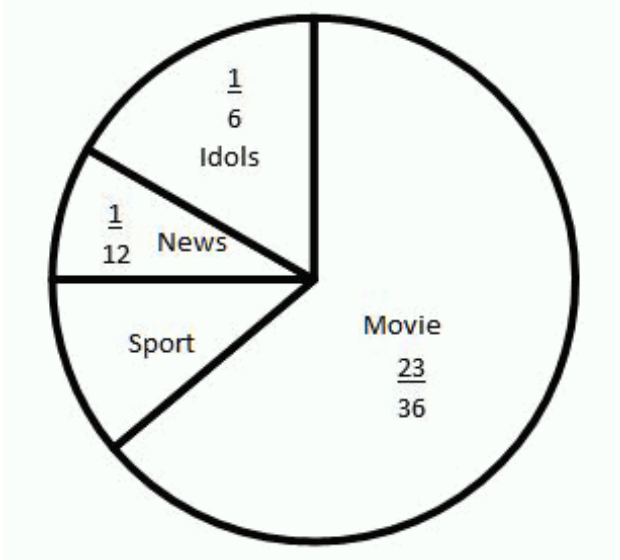
- A Tuesday, 24 May
  - B Wednesday, 25 May
  - C Saturday, 28 May
  - D Monday, 23 May
-



**Question 31**

The pie chart below indicates the TV programmes Susan watched over a period of six hours.

How long did she spend watching the Sport programmes?



- A 40 minutes
  - B 32 minutes
  - C 20 minutes
  - D 36 minutes
- 

**Question 32**

John scored the following marks out of 20 in each of five tests:

12 for Physical Science; 9 for English; 6 for Maths; 11 for Life Science and 7 for Accounting.

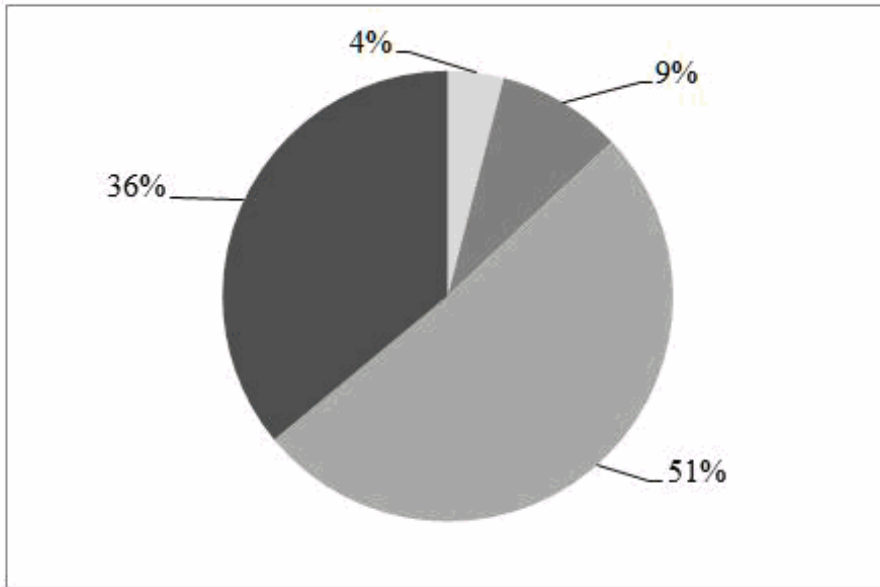
If a pie chart is drawn to represent these marks, what angle would be represented by Physical Science?

- A  $96^\circ$
  - B  $12^\circ$
  - C  $60^\circ$
  - D  $48^\circ$
-

**Question 33**

In a survey of 3 000 people taken in 2009, researchers tested the HIV status of all the participants. The graph below shows these results.

Determine how many HIV negative males there were.

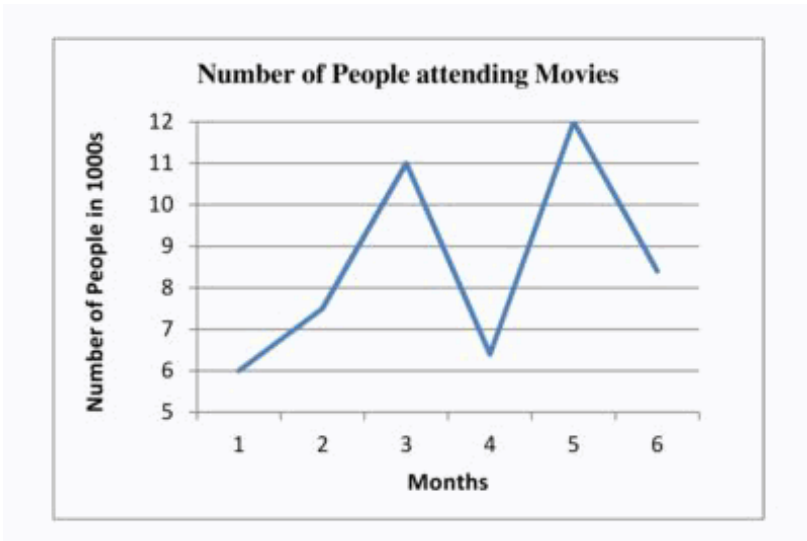


<b>HIV Status</b>	<b>HIV Positive Males</b>	<b>HIV Positive Females</b>	<b>HIV Negative Females</b>	<b>HIV Negative Males</b>
<b>Number of people</b>	<b>120</b>	<b>270</b>	<b>1 530</b>	

- A 1 080
  - B 723
  - C 89
  - D 36
-

**Question 34**

Month 1 is January. During which month did the most people attend movies?



- A March
  - B May
  - C October
  - D November
- 

**Question 35**

The table below compares the results of two athletes who ran in the same 100 m race.

Choose the statement which correctly interprets the data given.

Distance in metres	10	20	30	40	50	60	70	80	90	100
Quinn's time in seconds	1	2	3	4	5	6	7	8	9	10
Itai's time in seconds	1,3	2,6	3,9	5,2	6,5	7,8	9,1	10,4	11,7	13

- A Itai ran a further distance than Quinn
  - B Quinn ran faster than Itai
  - C Itai ran faster than Quinn
  - D Quinn ran a shorter distance than Itai
-

### Question 36

A survey was conducted in the Goodwood Car Factory to find details about the home language of the workers. The results are shown in the table below.

What is the percentage of workers who speak isiXhosa in their homes?  
Round off the answer to one decimal place.

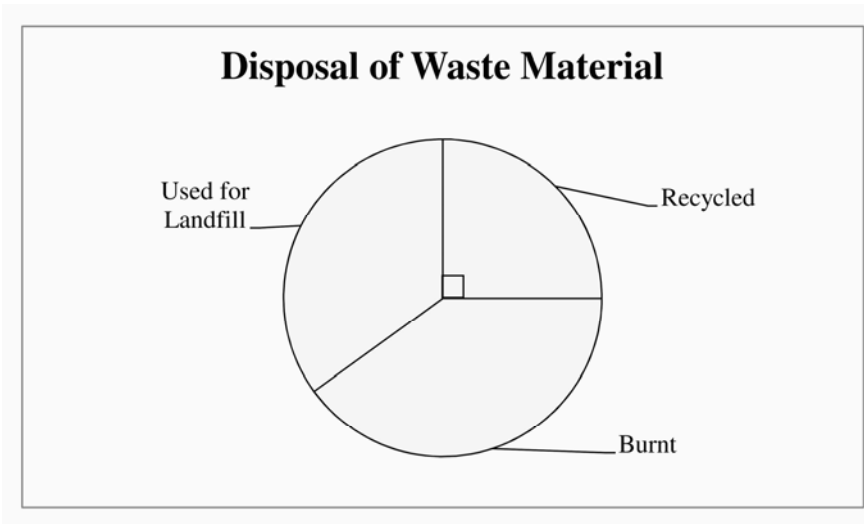
Home Language	White male workers	Black male workers	Coloured male workers	White female workers	Black female workers	Coloured female workers	TOTAL
English	140	2	45	35	0	31	253
Afrikaans	135	6	79	23	4	60	307
isiXhosa	0	264	0	0	58	0	322
isiZulu	0	25	0	0	32	0	57
<b>TOTAL</b>							

- A 28,1%
  - B 82,9%
  - C 88,9%
  - D 34,3%
- 

### Question 37

This chart shows how a municipality disposes of the waste material from their area. Two fifths of the waste is burnt.

Determine what percentage of the total waste is used for landfill.



- A 40,0%
  - B 37,5%
  - C 42,5%
  - D 35,0%
-

**Question 38**

Steve is a competitor in an archery competition. He hit the bullseye on 4 of his last 20 shots. What is the probability that he will hit the bullseye on his next shot?

The answer is simplified and written as a fraction.

$$\frac{2}{10}$$

Option A

$$\frac{1}{20}$$

Option B

$$\frac{1}{5}$$

Option C

$$\frac{4}{20}$$

Option D

A Option A

B Option B

C Option C

D Option D

---

**Question 39**

Daniel puts coins in a container as follows:

R2 coins with a value of R78,00

50c coins with a value of R54,00

R1 coins with a value of R53,00

What is the chance of him randomly taking out a 50c coin?

A 27%

B 54%

C 29%

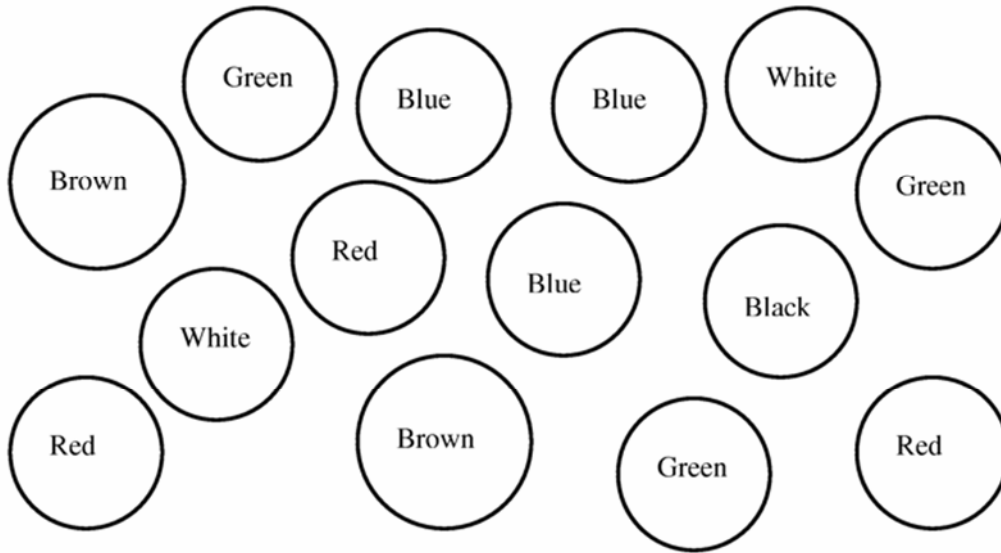
D 41%

---

**Question 40**

John has a total of fourteen marbles of different colours in a bag. John lets his friend, Sam, choose 1 marble out of the bag.

What is the probability of Sam choosing a ball that is NOT blue?



- A 3:14
  - B 3:11
  - C 11:14
  - D 14:11
-

**Question 41**

Alicia performs an experiment by spinning an arrow on a spinner. The spinner has four equal sections. The results of her experiment are shown in the table below.

Based on the data in the table, what is the *experimental* probability that the arrow will land on red?

Choose your answer from the options shown.

**ALICIA'S SPINNER EXPERIMENT**

Outcome	Frequency
Blue	11
Green	11
Orange	12
Red	8

**Option A**

$$\frac{8}{34}$$

**Option B**

$$\frac{1}{4}$$

**Option C**

$$\frac{8}{42}$$

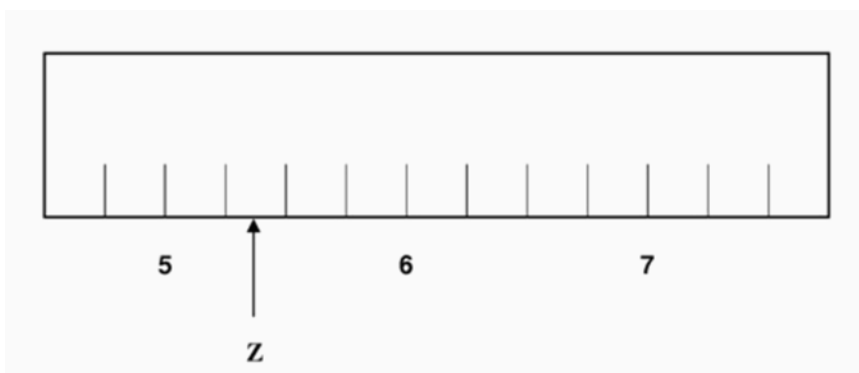
**Option D**

$$\frac{1}{8}$$

- A Option A
  - B Option B
  - C Option C
  - D Option D
- 

**Question 42**

Choose the correct value for Point Z on the ruler below:

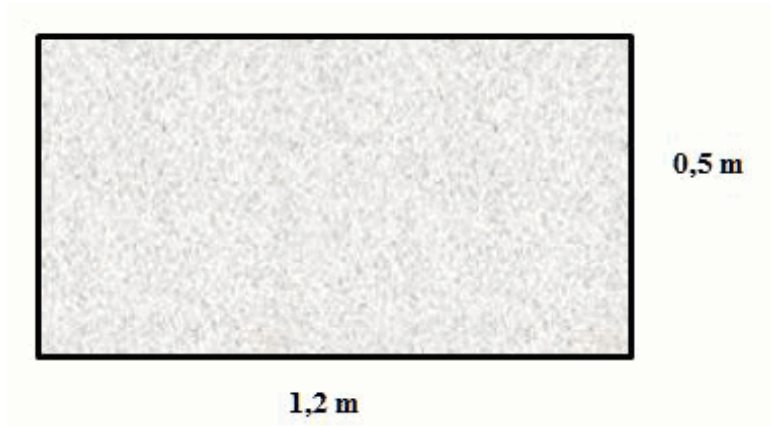


- A 5,125
  - B 5,15
  - C 5,375
  - D 5,25
-

**Question 43**

The diagram below shows a bathroom pane of glass.

What is the area of the pane?

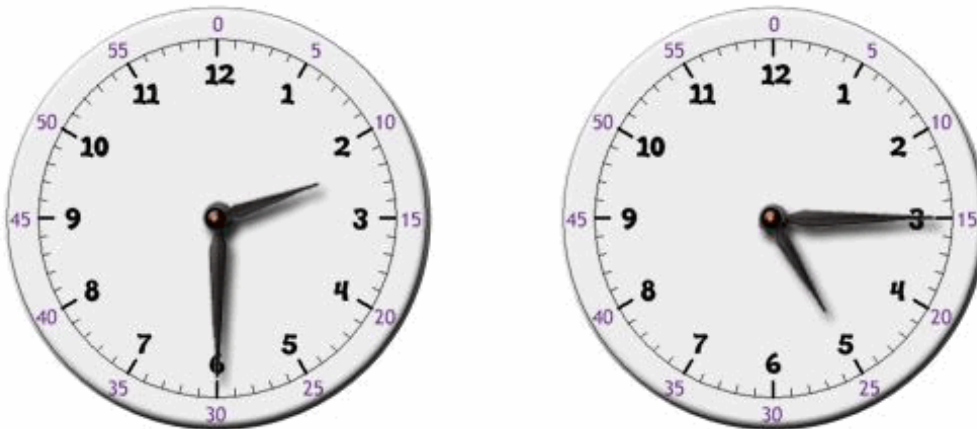


- A 3,4 m<sup>2</sup>
  - B 0,6 m<sup>2</sup>
  - C 1,7 m<sup>2</sup>
  - D 6,0 m<sup>2</sup>
- 

**Question 44**

These two clock faces show different times during one afternoon.

What is the time difference, in minutes, between the first and second clock?

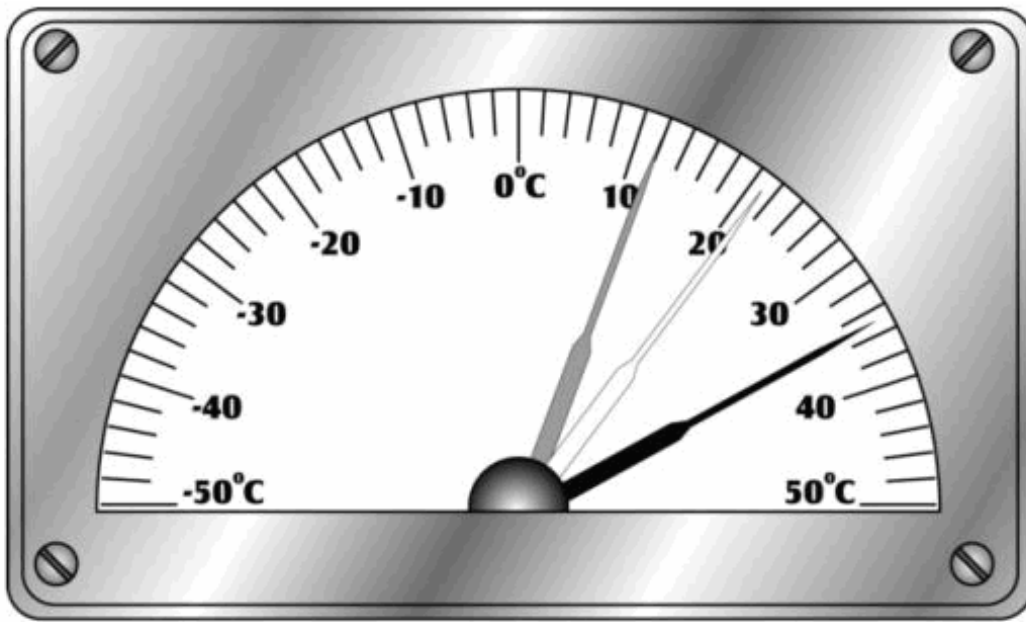


- A 165 minutes
  - B 180 minutes
  - C 195 minutes
  - D 105 minutes
-






**Question 45**

What is the difference between the maximum and minimum temperatures as shown on the thermometer below?



**Key to arrows**

Minimum temperature	
Temperature at present time	
Maximum temperature	

- A 21,0°C
  - B 23,0°C
  - C 21,5°C
  - D 24,0°C
- 

**Question 46**

Siyabonga is a florist and has a garden patch with a length of 8 m by a width of 6 m. She wants to buy a bigger piece of land. Each side must be a square of the one she has already.

Find the area of the piece of land she would like to buy.

- A 192 m<sup>2</sup>
  - B 1 536 m<sup>2</sup>
  - C 2 304 m<sup>2</sup>
  - D 1 152 m<sup>2</sup>
-

**Question 47**

Hendrik has a container with 4 200 millilitres of water.

How many litres of water are in Hendrik's container?

- A 42 litres
  - B 4,2 litres
  - C 0,42 litres
  - D 0,042 litres
- 

**Question 48**

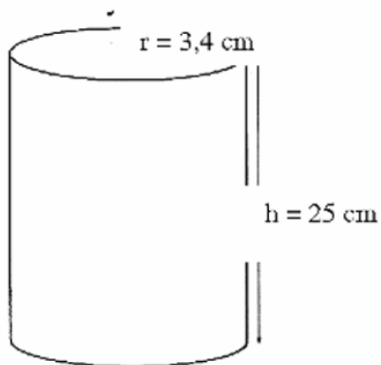
A car used 9,3 litres of petrol for each 100 km travelled. A trip of 300 km was started with 45 litres of petrol in the tank.

How much petrol remained in the tank at the end of the trip?

- A 17,1 litres
  - B 15,0 litres
  - C 27,9 litres
  - D 11,9 litres
- 

**Question 49**

How many litres of water will fill a container with the dimensions shown in the diagram below?



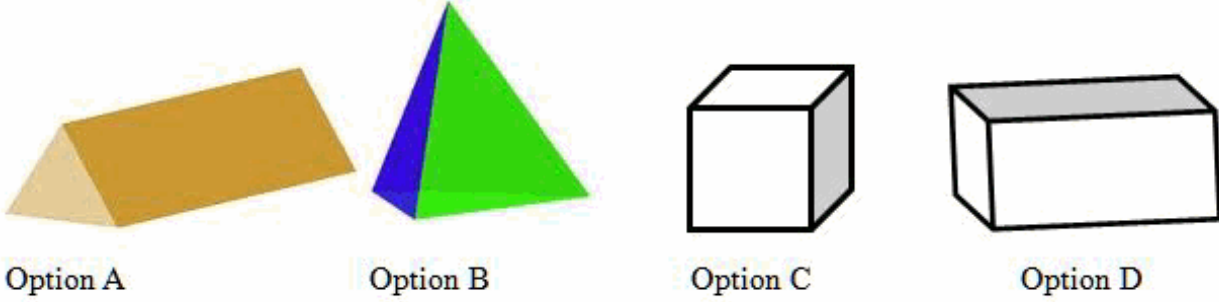
$$\text{Volume of cylinder} = \pi r^2 h$$

$$\pi = 3,14$$

- A 907,46 litres
  - B 9,07 litres
  - C 90,75 litres
  - D 0,91 litres
-

**Question 50**

Which of the following shapes has six square faces?

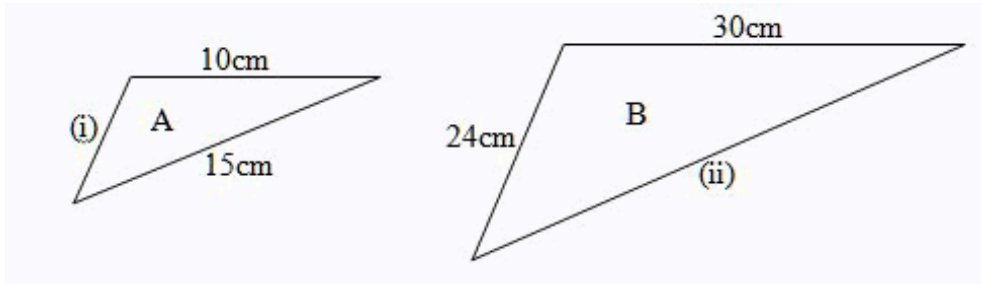


- A Option A
  - B Option B
  - C Option C
  - D Option D
- 

**Question 51**

Sphumlile draws a triangle on a piece of paper and enlarges it on a photocopier. Triangle A is the original and Triangle B is the enlargement.

Determine the length of the side (i)



- A 2
  - B 5
  - C 7
  - D 8
- 

**Question 52**

Two joggers run 8 km north and then 5 km west. What is the shortest distance, to the nearest tenth of a kilometre, they must travel to return to their starting point?

- A 3,0 km
  - B 6,5 km
  - C 13,0 km
  - D 9,4 km
-

**Question 53**

Given below is a diagram of the flag of South Africa with a length of 390 mm and a breadth of 260 mm.

Find the diagonal length in centimetres.

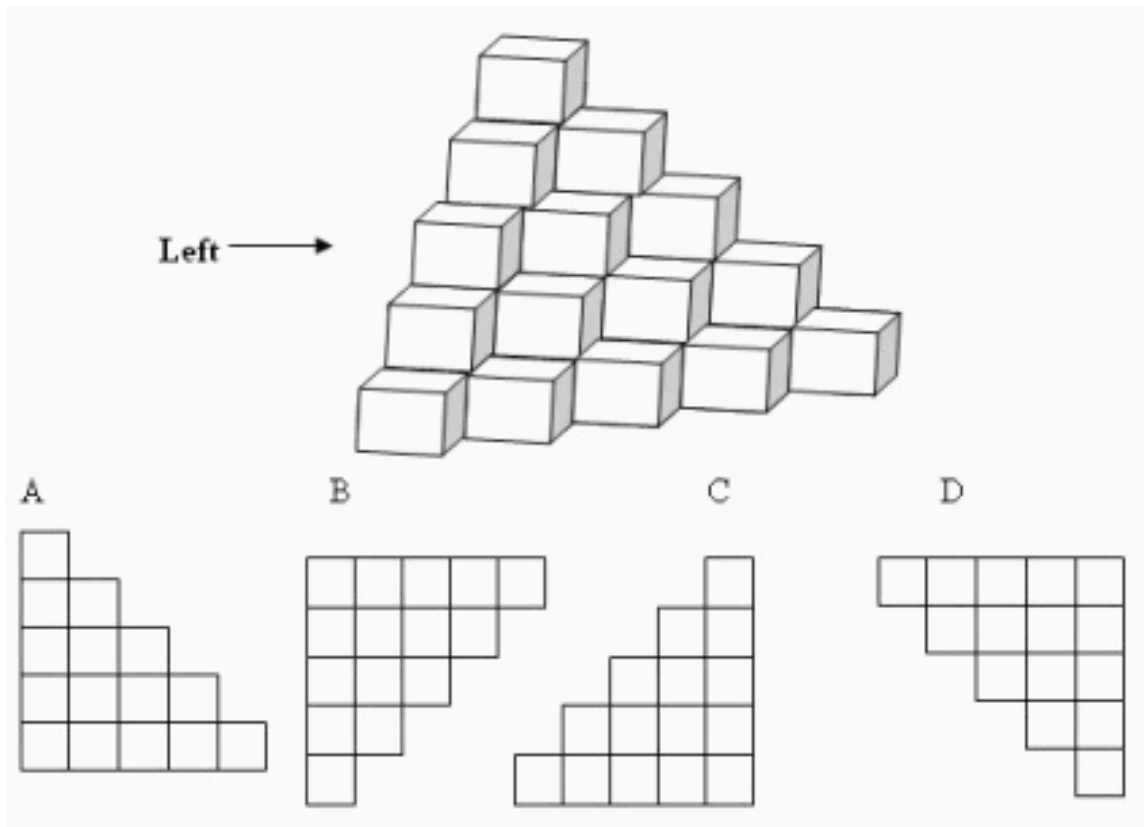


- A 46,87 cm
  - B 468,7 cm
  - C 130 cm
  - D 13,0 cm
-

**Question 54**

Identical cubes are stacked as shown in the figure below. The pile is 5 cubes high.

Which figure will you see from the left side of the pile?



- A Option A
  - B Option B
  - C Option C
  - D Option D
-

**Question 55**

Study the map below and then find the statement that is true from the options given.



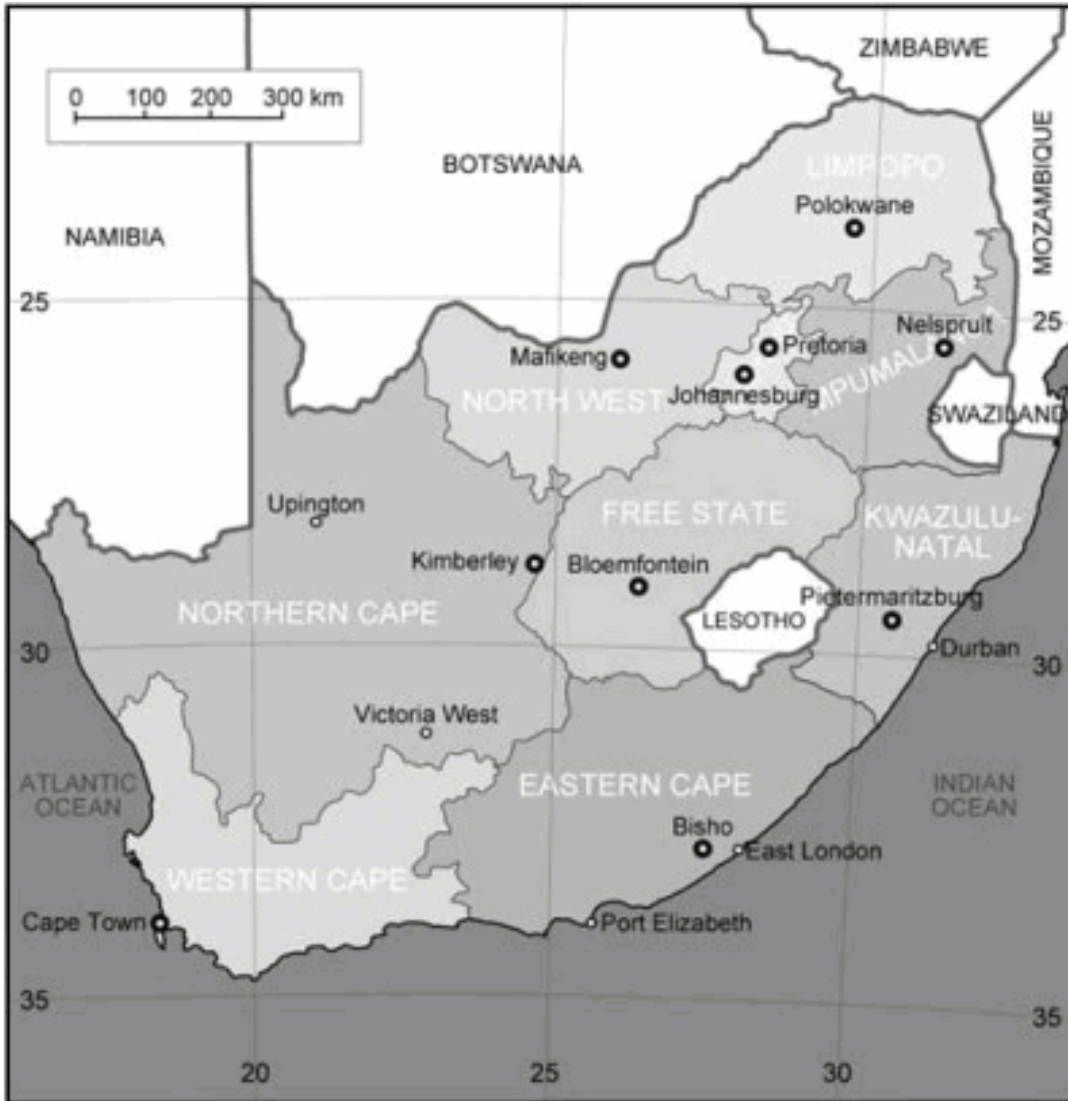
- A Moorreesburg is approximately 100 km north of Cape Town
  - B Melkbosstrand is approximately 60 km north of Cape Town
  - C Simon's Town is approximately 60 km south of Cape Town
  - D Worcester is approximately 100 km west of Cape Town
-

**Question 56**

On this map of South Africa, the lines of latitude and longitude have been drawn at 5° intervals.

Bonny wants to give the position of Johannesburg to an overseas friend, using lines of latitude and longitude.

Choose the correct option that best estimates the position of Johannesburg using degrees of latitude and longitude.



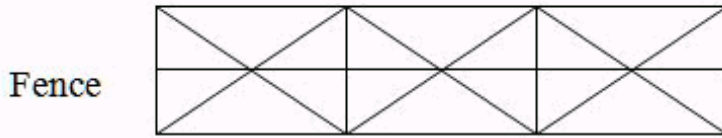
- A 26°S; 28°E
- B 29°S; 26°E
- C 26°N; 32°W
- D 26°N; 26°W

**Question 57**

Poles are used to make up sections of a fence. The diagram shows three sections.

The table below the diagram shows the number of poles needed for one, two and three sections of the fence.

How many poles will be needed to make six sections of the fence?

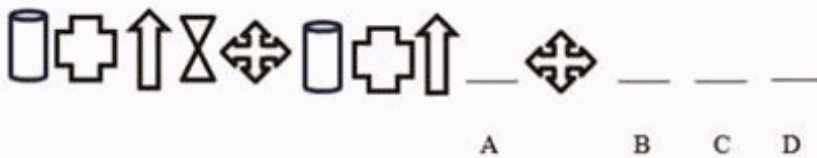


<b>Number of sections</b>	1	2	3	6
<b>Number of poles</b>	7	13	19	?

- A 38 poles
  - B 27 poles
  - C 31 poles
  - D 37 poles
- 

**Question 58**

Study the pattern below and choose the shape from the options given that would replace B in the pattern.



- Option A
- Option B
- Option C
- Option D

- A Option A
  - B Option B
  - C Option C
  - D Option D
-



**Question 59**

Johannes has to paint the living room walls with the following dimensions: 3 m high with a total wall length of 18 m (allowing for doors and windows). The paint he purchases has a spreading rate of 11 m<sup>2</sup> per litre. He will apply 2 coats of paint. The paint costs R210 per 5 litre tin. How much will he have to pay for the paint required? Give your answer to the nearest Rand.

- A R210
  - B R840
  - C R420
  - D R630
- 

**Question 60**

David and Patrick played a game by throwing two six-sided dice at the same time.

What is the probability that the total score on any one throw is more than 8?

Option A	Option B	Option C	Option D
$\frac{7}{36}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{5}{18}$

- A Option A
  - B Option B
  - C Option C
  - D Option D
-