



AUGUST 2012

**FOUNDATIONAL MATHEMATICAL LITERACY
EXEMPLAR 1**

TIME TO COMPLETE: 2½ HOURS

Question 1

What are the missing numbers in the following sequence?

3, 6, _____, 24, _____.

- A 8 and 26
 - B 9 and 27
 - C 9 and 33
 - D 12 and 48
-

Question 2

The readings (in kWh) on Mrs Sebe's electricity meter at the end of June and the end of July are shown in the diagrams below.

If each unit of electricity costs 29,12 cents, what is the cost of the electricity used by Mrs Sebe in July?

June

6	8	2	3	2	,	0
---	---	---	---	---	---	---

July

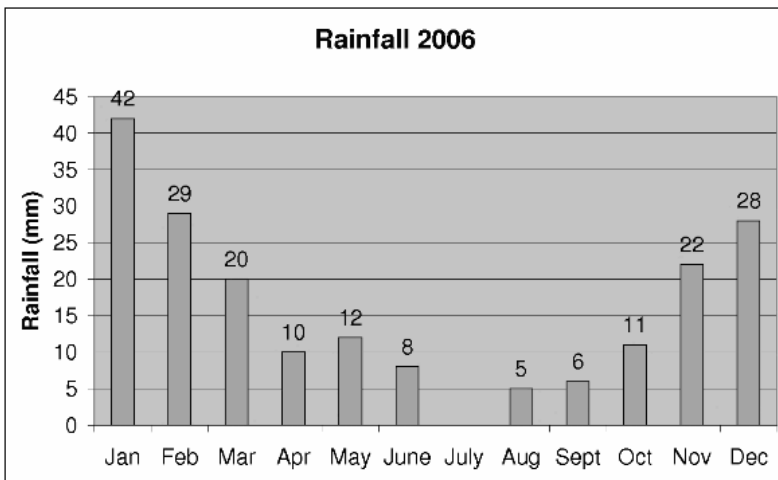
6	8	8	2	2	,	5
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- A R590.50
 - B R119,54
 - C R171,95
 - D R200,41
-

Question 3

The rainfall in a certain town in South Africa was recorded in 2006. The data for July is missing.

What was the rainfall for July if the total rainfall in 2006 was 200 mm?



- A 7 mm
 - B 6,5 mm
 - C 193 mm
 - D 14 mm
-

Question 4

The municipality put up foreign flags, South African flags and FIFA flags along the main roads for the Soccer World Cup Tournament in a ratio of 31:5:4.

How many flags in total did they put up if 19 995 foreign flags were put up?

- A 68 882 flags
 - B 25 800 flags
 - C 35 991 flags
 - D 22 217 flags
-

Question 5

A bill at a restaurant comes to R234,49.

If a 10% tip is added, how much is paid for the meal in total?

- A R211,09
 - B R224,49
 - C R257,94
 - D R244,49
-

Question 6

The price of a 0,5 kg packet of sugar, before 14% VAT is added, is R8,00.

How much will you have to pay for 2,5 kg of sugar, including VAT?

- A R54,00
 - B R40,00
 - C R45,60
 - D R34,40
-

Question 7

The table below shows the incidence of Swine flu cases in certain countries of the world that were mostly affected by the virus.

Determine the mean mortality rate in the countries listed. The answer has been rounded to the nearest whole number.

Country	Number of cases	Mortality Rate
Argentina	1 587	26
Australia	4 568	9
Canada	7 983	25
Chile	7 376	14
Mexico	10 262	119
Thailand	1 414	1
United Kingdom	7 447	3
United States	33 902	170

- A 367
 - B 20
 - C 169
 - D 46
-

Question 8

The Palala Soccer team organised a trip to Pretoria Zoo. Twenty-five people signed up for the trip. A bus was hired, costing each person R66,50. Six of the people decided not to go on the trip. They did not pay anything towards the hire of the bus.

What will the new cost per person be?

- A R66,50
 - B R1 263,50
 - C R87,50
 - D R2 187,50
-

Question 9

An amount of R20 000 is invested. Simple interest is calculated at 12% per annum.

How much will there be in the account after 4 years?

- A R48 000
 - B R32 000
 - C R29 600
 - D R20 048
-

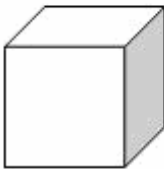
Question 10

In a perfect cube the length of every side is the same. The area of one side of a cube is given as $(\text{length of side})^2$. The volume of the cube is given as $(\text{length of side})^3$.

Kagiso's job is to make and paint wooden boxes shaped as a cube. The length of one side is 32 cm.

- (i) How much wood does he need for 1 side of the box?
- (ii) How much space does each box occupy?

Cube



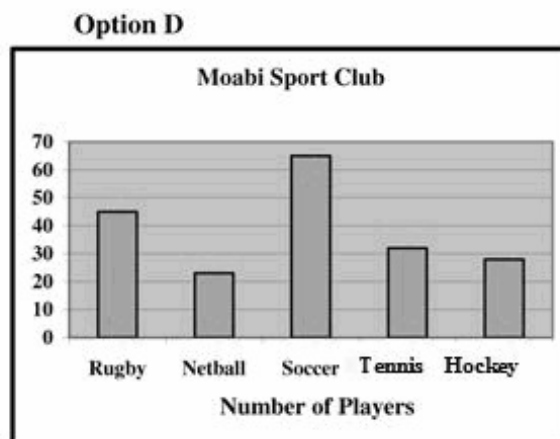
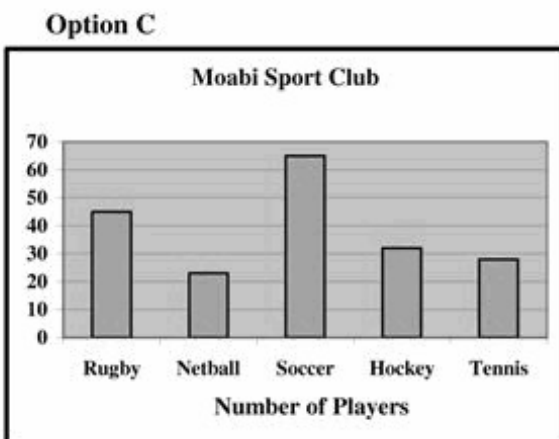
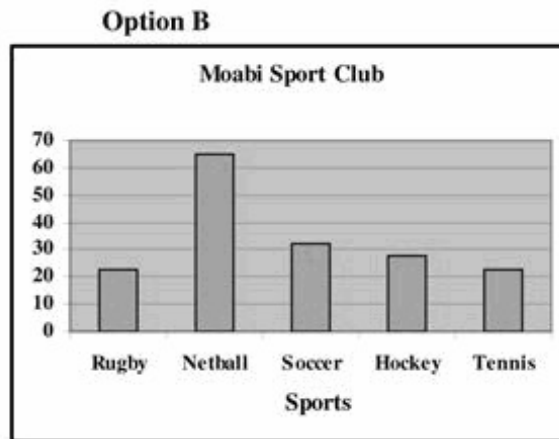
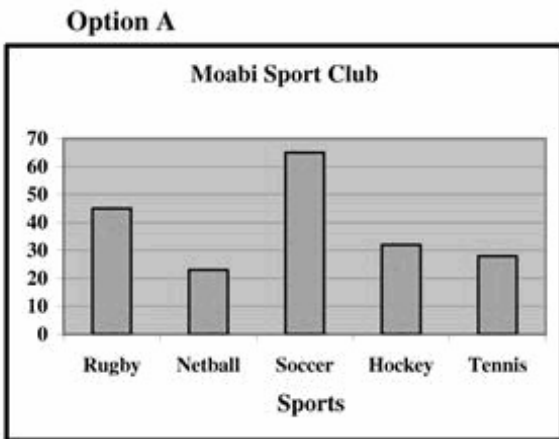
- A (i) 1 024 cm² (ii) 32 768 cm³
 - B (i) 64 cm² (ii) 96 cm³
 - C (i) 1 024 cm² (ii) 96 cm³
 - D (i) 64 cm² (ii) 32 768 cm³
-

Question 11

The following table shows the number of members of the Moabi Sports Club taking part in the various sports.

Which histogram correctly represents the information in the table?

RUGBY	NETBALL	SOCCER	HOCKEY	TENNIS
45	23	65	32	28



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

Question 12

Mandla's taxable income for the year is R750 000. He must pay tax according to the formula:
 $R131\,125 + 40\%$ of the amount above R450 000.

What tax must Mandla pay for the year?

- A R431 125
 - B R300 000
 - C R120 000
 - D R251 125
-

Question 13

Priscilla sets her kitchen clock correctly at 13:00 on Sunday. She knows that the clock is faulty and loses three minutes every hour. She has to leave home at 10:00 on Monday morning to attend a meeting.

What will her clock read when the correct time is 10:00 on Monday?

- A 08:57
 - B 09:39
 - C 10:21
 - D 11:03
-

Question 14

The frequency of a musical note is measured in Hertz (Hz). The frequency of the note 'A' is 440 Hz. The frequency of the note 'B' is 493,88 Hz.

Calculate the frequency of 'C' (correct to the nearest Hz), by increasing the frequency of 'B' by 5,95%.

- A 499 Hz
 - B 500 Hz
 - C 522 Hz
 - D 523 Hz
-

Question 15

Themba scored the following marks in 5 tests:

10 for English; 11 for Mathematics; 8 for Life Science; 9 for Afrikaans and 7 for Business Economics.

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

- A 29°
 - B 18°
 - C 64°
 - D 8°
-

Question 16

A rugby stadium has a capacity of 60 000 people. The table below shows the numbers of spectators who attended matches during one month.

What fraction of the stadium was filled in the second week?

WEEK 1	WEEK 2	WEEK 3	WEEK 4
52 800	48 600	51 000	46 800

$$\frac{88}{100}$$

A

$$\frac{39}{50}$$

B

$$\frac{81}{100}$$

C

$$\frac{51}{60}$$

D

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

Question 17

Nomusa leaves South Africa to work in the USA for 2 years. She earns \$2 850 per month. She saves 50% of her salary every month.

How much money will she save in South African currency after 2 years? (Use exchange rate of \$1=R7,85)

- A R536 940,00
 - B R268 470,00
 - C R44 740,50
 - D R68 400,00
-

Question 18

What two basic shapes make up a soccer ball?



- A Hexagon and Pentagon
 - B Pentagon and Septagon
 - C Octagon and Hexagon
 - D Septagon and Octagon
-

Question 19

Themba is a car salesman. He gets a basic salary of R3 000 a month and commission of R2 500 for every car he sells. In July Themba sold 5 cars.

What was his gross income in July?

- A R27 500
 - B R5 500
 - C R12 500
 - D R15 500
-

Question 20

Thabo earns R8 265,00 per month. 25% is deducted from his salary for tax. He spends R1 628,45 on clothing which includes tax of 14%.

What is the total tax amount that Thabo paid in that month?

- A R2 294,23
 - B R2 066,25
 - C R2 266,24
 - D R2 588,25
-

Question 21

The length of a soccer field is 110 m along the touch lines and 75 m along the goal lines. The coach of the Palala soccer team instructs the team to run around the field 15 times.

What is the distance they will run in kilometres?

- A 5,55 km
 - B 1,65 km
 - C 3,30 km
 - D 2,25 km
-

Question 22

Kgotso has finished school and has decided to become a motor mechanic. He has to work in an apprenticeship for 4 years during which time he will also have to study part-time. The Menton Motor Company is willing to pay for his studies. He will receive a salary during this time on the condition that he passes his exams.

If his studies cost the company R15 000 per year, what will the company pay out altogether for the four years of his apprenticeship?

Use the table below to calculate this amount.

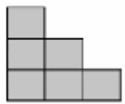
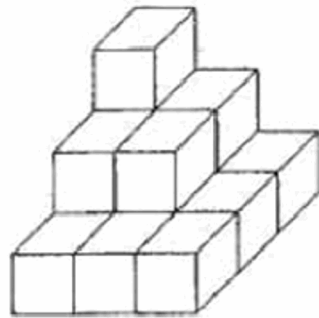
YEAR	1	2	3	4
SALARY PER MONTH	R1 500	R2 000	R3 000	R4 500

- A R192 000
 - B R132 000
 - C R147 000
 - D R71 000
-

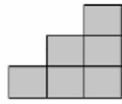
Question 23

The diagram shows a block of cubes. Dillo looks at the block of cubes from above.

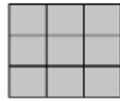
Which of the following options correctly illustrates Dillo's view?



Option A



Option B



Option C



Option D

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

Question 24

Boleka Bank loans money according to the table below.

If R150 000 is loaned and repaid over 30 years, what is the total amount paid back to the bank?

Amount loaned	Repayment per month		
	20 years	25 years	30 years
R100 000	R1 600	R1 350	R1 100
R150 000	R1 850	R1 600	R1 400
R200 000	R2 100	R1 800	R 1 550

- A R354 000
 - B R450 000
 - C R504 000
 - D R576 000
-

Question 25

The number of cameras sold in a shop during four days is shown in the graph below.

On what day did the shop sell exactly 20 cameras?

CAMERAS SOLD	
Day	Number of Cameras
Tuesday	X X
Wednesday	X X X X X X
Thursday	X X X X X
Friday	X X X X

KEY
X = 5 cameras

- A Thursday
 - B Friday
 - C Tuesday
 - D Wednesday
-

Question 26

Mrs Nel bakes cakes to sell. She has a new recipe for chocolate cupcakes. The recipe she is using makes 24 cupcakes. According to the recipe she must use 750 ml of milk and 500 g of flour.

If Mrs Nel wants to make 60 cupcakes how much milk and flour will she need?

- A 786 ml of milk and 536 g of flour
 - B 1,875 ml of milk and 1,250 g of flour
 - C 0,786 l of milk and 0,536 kg of flour
 - D 1,875 l of milk and 1,250 kg of flour
-

Question 27

Janine's bank account balance is R360. She withdraws R500 from her account. Later her employer deposits R9 050 into her bank account.

What is her new bank balance after the last transaction?

- A R8 910
 - B R9 190
 - C R9 910
 - D R8 850
-

Question 28

Tommy puts down marbles on blocks as shown in the diagram below.

How many marbles will he have put down in total by the time he gets to block G if he continues with this pattern?

Blocks	A	B	C	D	E	F	G
Marbles	1	2	3	4			

- A 8
 - B 28
 - C 7
 - D 21
-

Question 29

The table below shows the prices of different fuels at the coast and inland during 2009.

Which fuel had the highest average price and which fuel had the lowest average price?

Location	Price per litre		
	Petrol (unleaded)	Diesel	Paraffin
Inland	R7,49	R6,68	R4,81
Coastal	R7,36	R6,55	R4,52
Average Price	?	R6,62	?

	HIGHEST	LOWEST
Option A	Petrol	Diesel
Option B	Diesel	Paraffin
Option C	Inland	Coastal
Option D	Petrol	Paraffin

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

Question 30

A bottle of cough mixture contains 250 ml. The dosage instructions are shown in the table below.

Themba weighs 28 kg. He takes the cough mixture twice a day for 7 days.

How much cough mixture is left in the bottle after 7 days?

WEIGHT OF CHILD	0 – 15 kg	16 – 30 kg	31 – 45 kg
DOSAGE	5 ml	10 ml	15 ml

- A 140 ml
 - B 110 ml
 - C 210 ml
 - D 40 ml
-

Question 31

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

What would the digital display be?

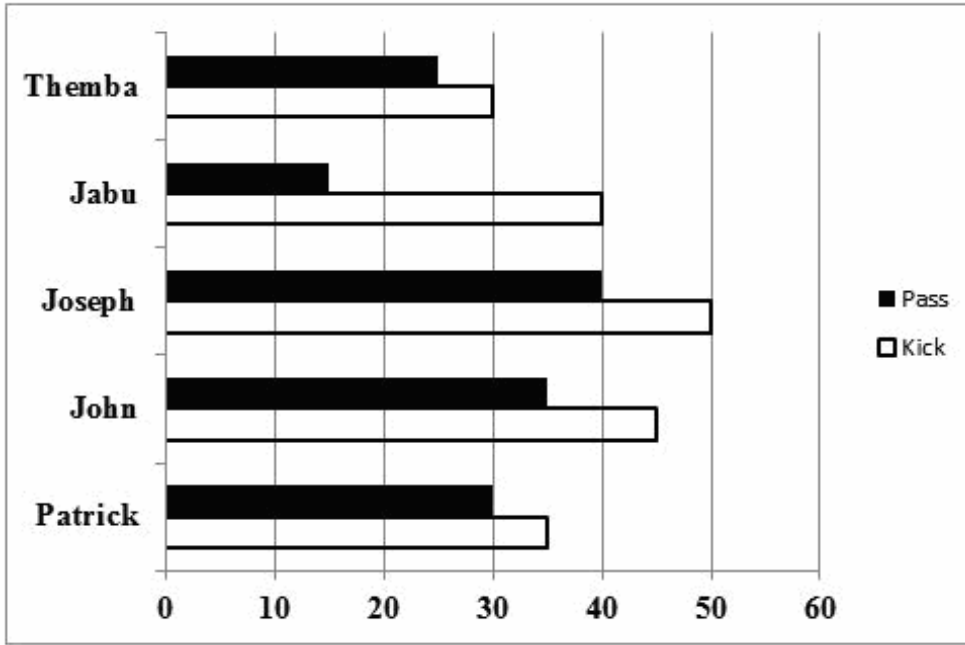


- A 11:35
 - B 11:19
 - C 23:19
 - D 23:35
-

Question 32

A school held a competition for the soccer team players and recorded the distances, in metres, that some of the players kicked the ball and passed the ball. The graph below shows these results.

- (i) Which player passed the ball the shortest distance?
- (ii) Which player kicked the ball the longest distance?



- A (i) Jabu and (ii) Joseph
 - B (i) Joseph and (ii) John
 - C (i) Themba and (ii) Patrick
 - D (i) Patrick and (ii) John
-

Question 33

Rachel is a saleslady. She earns a basic salary of R8 000 per month and 18% commission on the sales she makes.

She pays R900 per month into a pension fund, and R2 300 goes to tax.

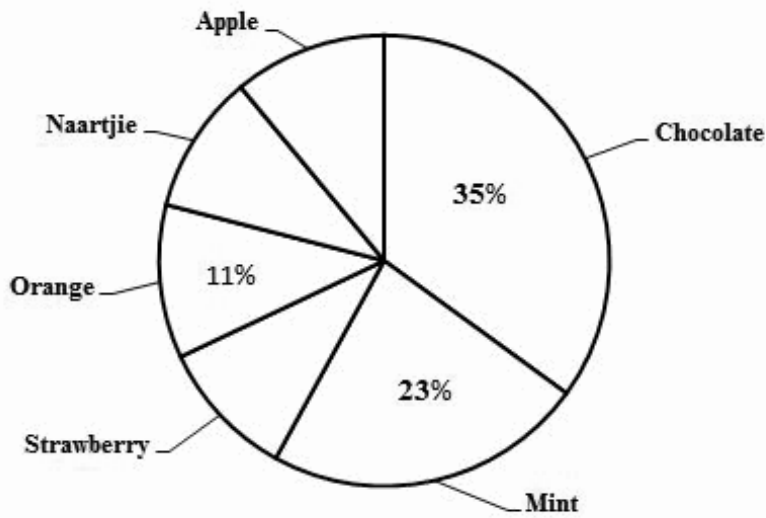
How much does Rachel take home in June if her sales for the month amounted to R35 000?

- A R 39 800
 - B R 23 800
 - C R 17 500
 - D R 11 100
-

Question 34

The daily sales of various flavours of ice-creams are shown in the pie chart below.

If 66 orange-flavoured ice-creams were sold, how many ice-creams were sold in total on that day?

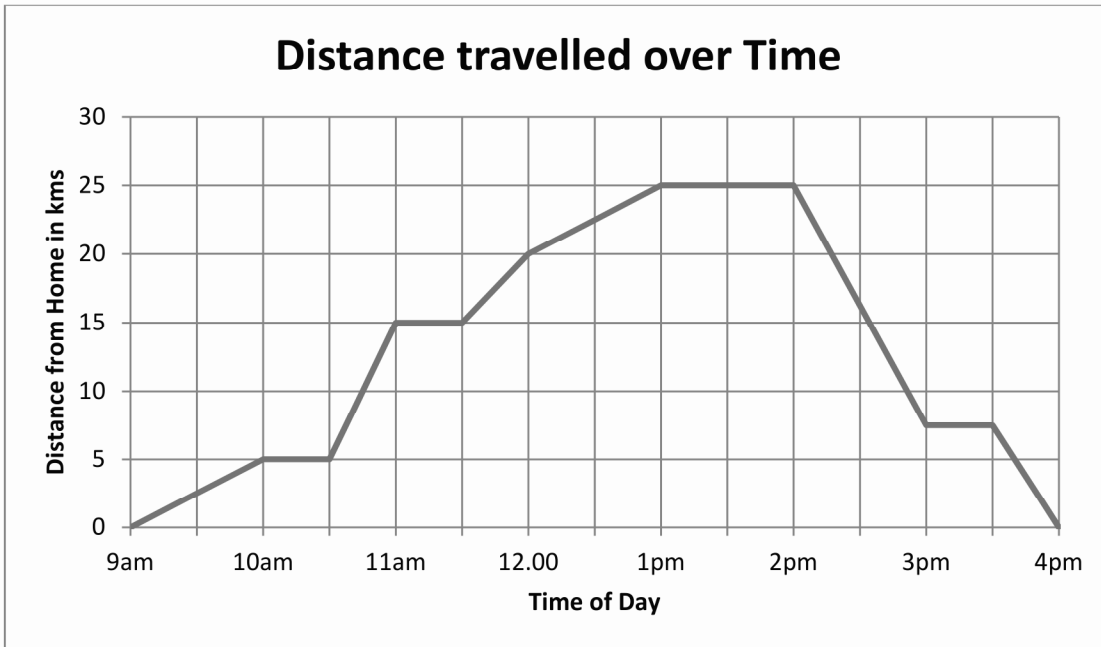


- A 660
 - B 690
 - C 600
 - D 100
-

Question 35

Jackie went for a long ride on her bicycle. She left her home in the morning and came back much later that afternoon. This graph shows the time and distances that she travelled. Jackie made a number of stops on her journey.

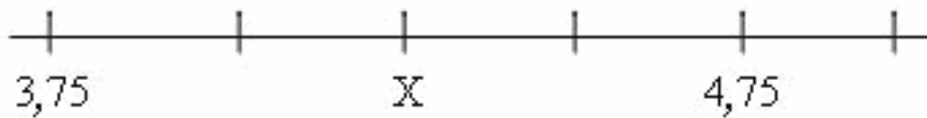
What was the total time that she rested during the ride?



- A 3 ½ hours
 - B 2 ½ hours
 - C 4 hours
 - D 2 hours
-

Question 36

Point X on the number line is represented by which number?

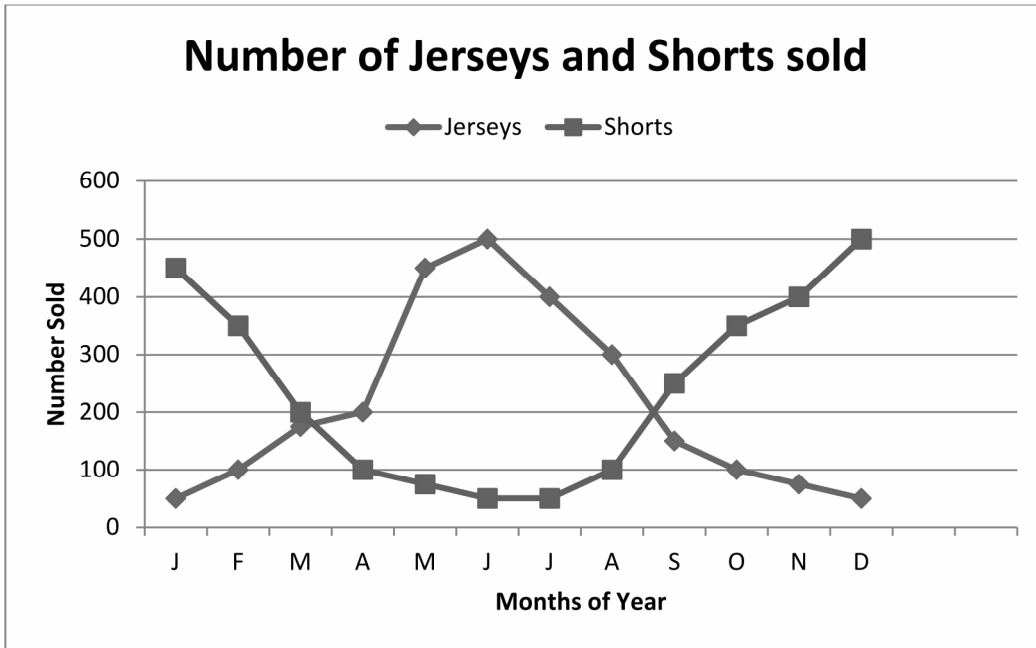


- A 3,775
 - B 4,05
 - C 4,25
 - D 4,0
-

Question 37

The graphs below show the number of jerseys and shorts sold in a men's clothing store over the period of one year.

According to these graphs, during which period does the greatest increase in jersey sales occur?



- A February - March
 - B August - September
 - C November - December
 - D April - May
-

Question 38

Examples of spheres are balls, bubbles and planets.

The formula for the volume of a sphere (ball) is shown below, where $\pi = 3,14$.

What is the volume of a bubble, in cm^3 , if the distance from the surface to the centre is 2,5 cm?

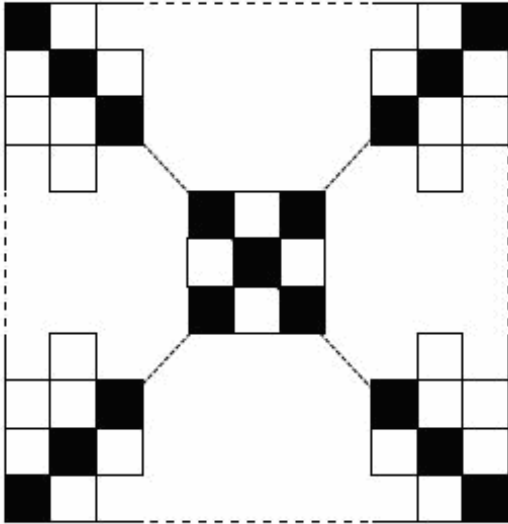
$$V = \frac{4}{3} \times \pi \times r^3$$

- A 196,25 cm^3
 - B 36,8 cm^3
 - C 147,19 cm^3
 - D 65,42 cm^3
-

Question 39

The floor in Jacob's lounge is square and has been tiled with square tiles. Along the two diagonals there are 125 tiles altogether.

How many tiles are there on the whole floor?

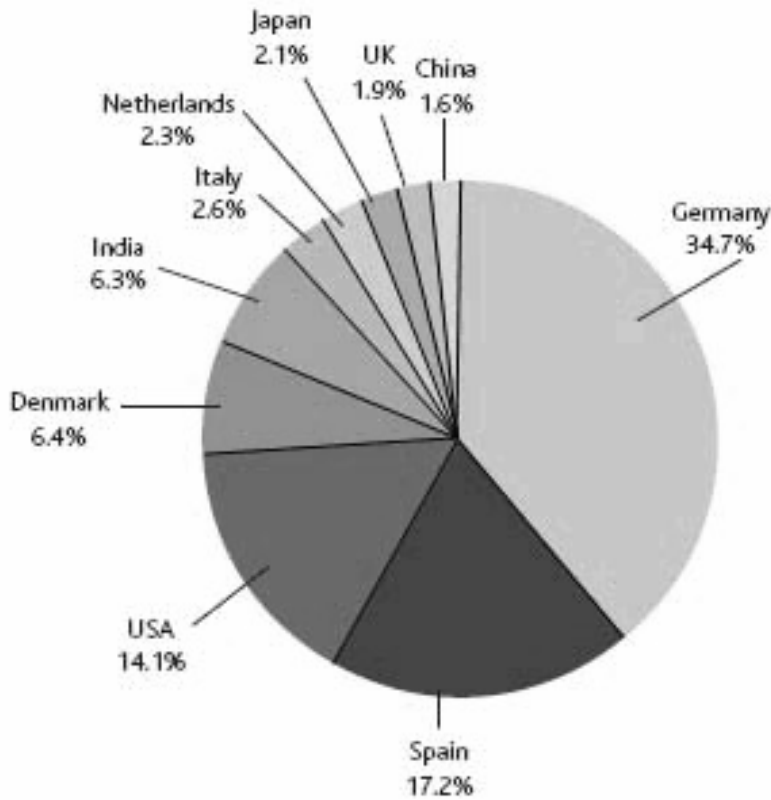


- A 4 096
 - B 961
 - C 15 625
 - D 3 969
-

Question 40

Study the Pie Chart below. It illustrates the percentage usage of wind-powered electricity in the world. The current total world capacity for generating power by means of the wind is 42 735 megawatts (MW).

What is the angle of the sector which represents Germany's usage of wind power?



- A 125°
 - B 65,3°
 - C 140°
 - D 65,3°
-

Question 41

A drum holding 100 litres of water develops a crack. Water leaks out at a rate of 0,5 litre every half a minute.

How many litres of water will be lost in 45 seconds?

- A 0,75 litres
 - B 1,25 litres
 - C 3,75 litres
 - D 1,50 litres
-

Question 42

A building contractor must number all thirty of the housing units in a town-house complex using brass digits 0, 1, 2, 3,, 9.

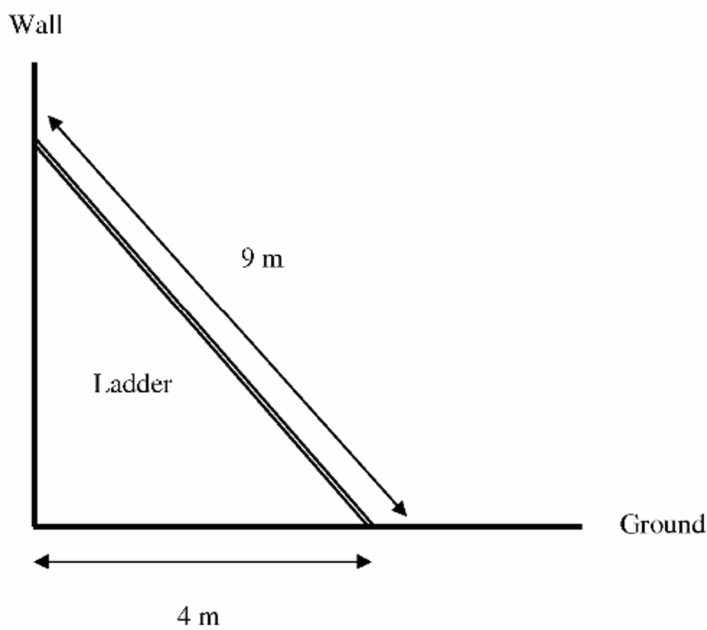
How many of the number '2' digits will he require?

- A 11
 - B 12
 - C 13
 - D 3
-

Question 43

A ladder which is 9 m long is placed on the ground adjacent to a building. The base of the ladder is positioned 4 m from the base of the building.

Use the Theorem of Pythagoras ($c^2=a^2+b^2$) to work out at what height the ladder will touch the building. The answer is given correct to 2 decimal places.



- A 9,85 m
 - B 3,16 m
 - C 5,1 m
 - D 8,06 m
-

Question 44

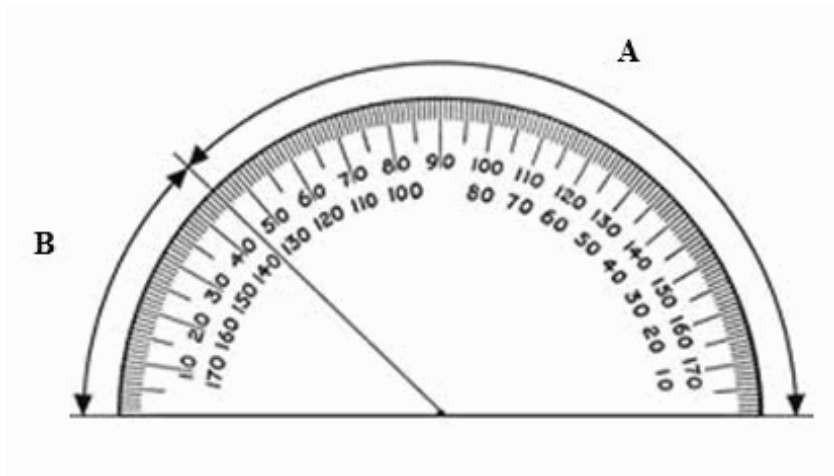
During the last local government elections the Vuka Party won 27% of the votes.

If the Vuka Party received 21 573 votes, calculate the total number of votes cast in the election.

- A 48 573
 - B 58 327
 - C 79 900
 - D 94 573
-

Question 45

What is the size of the angle A?



- A 130°
 - B 150°
 - C 135°
 - D 225°
-

Question 46

A normal pack of playing cards contains 4 'suits' - hearts, clubs, diamonds and spades. Each suit contains 13 cards - the number cards from 2 to 10 and 4 'picture' cards - a Jack, a Queen, a King and an Ace. There are 52 cards in a pack. The pack is completely shuffled and a card is drawn.

What is the probability of drawing a picture card?

 HEARTS	ACE	2	3	4	5	6	7	8	9	10	Jack	Queen	King
 CLUBS	ACE	2	3	4	5	6	7	8	9	10	Jack	Queen	King
 DIAMONDS	ACE	2	3	4	5	6	7	8	9	10	Jack	Queen	King
 SPADE	ACE	2	3	4	5	6	7	8	9	10	Jack	Queen	King

- A 3 out of 13
 - B 4 out of 13
 - C 7 out of 13
 - D 12 out of 52
-

Question 47

Sabelo and Jack travelled from Johannesburg to eThekweni, a distance of 585 km. They left Johannesburg at 05h05 and stopped for breakfast in Montrose at 07h55.

How long, in minutes, did the first leg of the journey take?

- A 185 mins
 - B 175 mins
 - C 170 mins
 - D 180 mins
-

Question 48

Refilwe speaks to her boyfriend on the phone from 19:30 to 20:30 on a Friday evening which is not a public holiday.

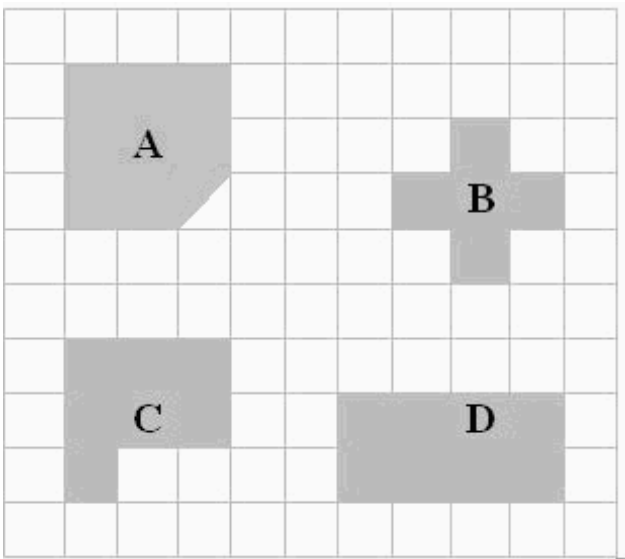
If she uses a cell phone with Contract Calling, calculate the cost of the call.

Off-peak times	Pre-paid Call charges	Contract Call charges
Weekends Public holidays	R1,20 per minutes during off-peak hours	R1,08 per minute during off-peak hours
Mon-Fri after 20:00	R3,45 per minute during peak hours	R3,16 per minute during peak hours

- A R139,50
 - B R127,20
 - C R64,80
 - D R189,60
-

Question 49

Which shape has the smallest perimeter?



- A Shape A
 - B Shape B
 - C Shape C
 - D Shape D
-

Question 50

There are 30 balls in a bucket. The following statements are true:

Three-fifths of the balls are red

Six of the balls are blue

The other balls are green

What are the chances of picking one green ball out of the bucket? Give your answer as a ratio.

- A 5 : 1
 - B 1 : 6
 - C 1 : 5
 - D 1 : 30
-

Question 51

Siyaya is a contract worker at a factory. Below is his job card and the payment strategy.

How much is Siyaya's gross weekly payment?

Job Card: Siyaya Sive		PAYMENT STRATEGY
COY: 57982009		
ID: 8002296789084		
Monday	8 hrs	Hourly rate: <ul style="list-style-type: none"> • R65,25 per hour • 1½ times basic pay for overtime • 2 times basic pay for Sundays & Public Holidays
Tuesday (Public Holiday)	8 hrs	
Wednesday	8 hrs	
Thursday	8 hrs	
Friday	8 hrs	
OVERTIME	12 hrs	
SATURDAY	n/a	
SUNDAY	n/a	

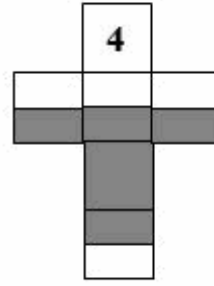
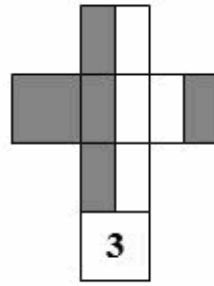
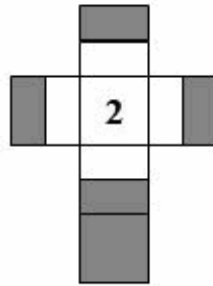
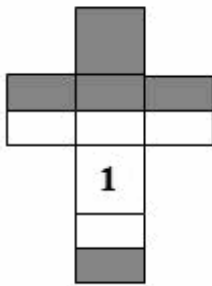
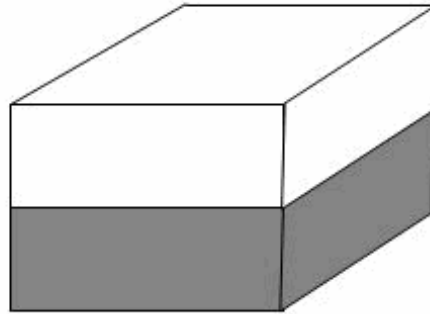
- A R4 306,50
 - B R3 393,00
 - C R4 045,50
 - D R4 698,00
-

Question 52

Etta has a job in a factory making square cardboard boxes. The base and half of each of the 4 sides touching the base are shaded dark grey, as shown in the diagram below.

Below the diagram are 4 nets of the cube (the cardboard box opened out). In each case a different base and sides have been shaded.

Which one of these nets will Etta NOT be able to use to make the correctly shaded box?

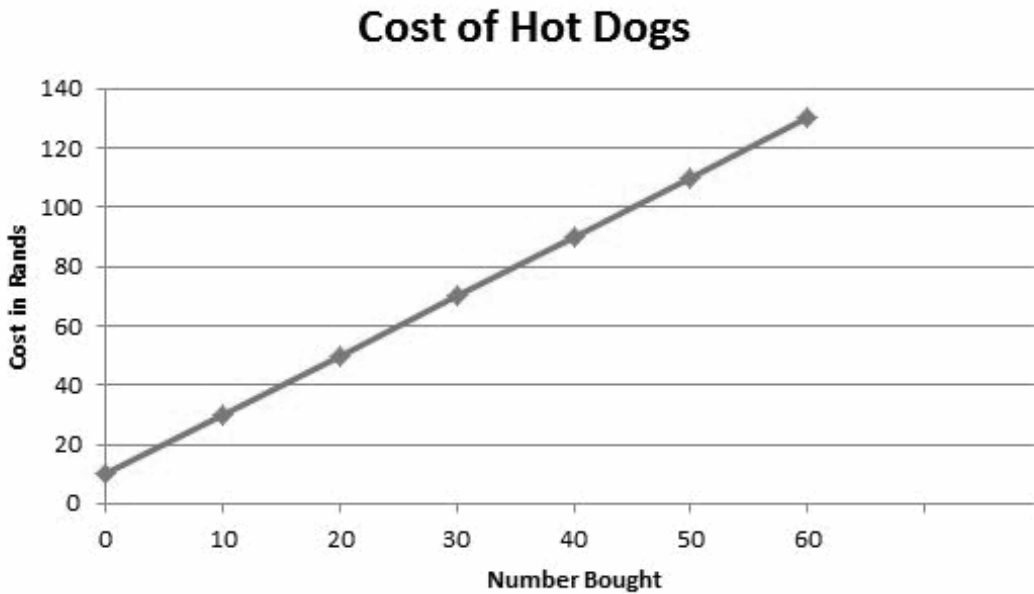


- A Net 1
 - B Net 2
 - C Net 3
 - D Net 4
-

Question 55

Johnny makes and sells hot dogs for a living. This graph shows his costs plotted against the number of hot dogs he sells.

What will be his cost for 30 hotdogs?



- A R10
 - B R15
 - C R60
 - D R70
-

Question 56

Masega made tablecloths for square tables. The square tables had sides of 1,2 m and the cloth hung 30 cm over the edge of the table all the way round. She put lace around the edge of each tablecloth. She made 15 tablecloths.

How much lace did she use for all the tablecloths she made?

- A 90 m
 - B 144 m
 - C 108 m
 - D 33,75 m
-

Question 57

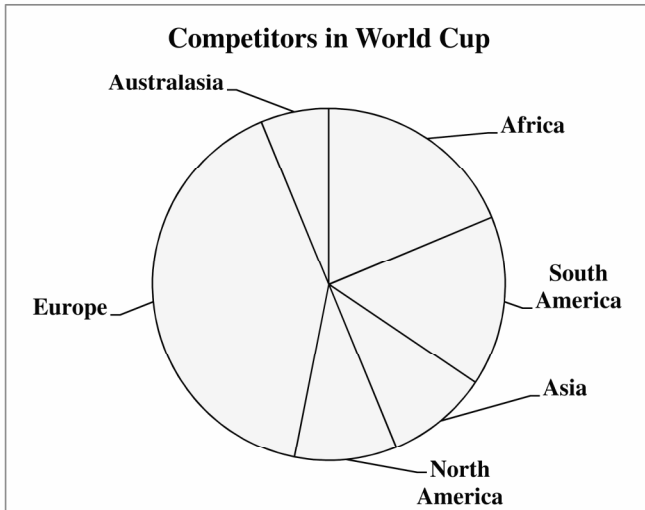
32 Countries competed in our 2010 World Cup soccer tournament. The pie chart and table below show how many countries came from each part of the world.

Determine

(i) the size of Africa's sector in the pie chart (to the nearest degree)

and

(ii) the percentage of the pie chart occupied by South America (to the nearest percentage)

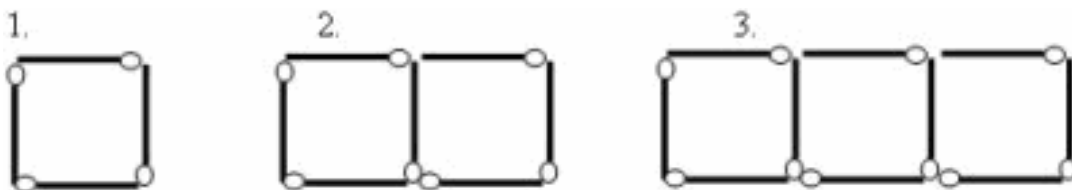


Continent	Number of Countries
Africa	6
South America	5
Asia	3
North America	3
Europe	13
Australasia	2

- A (i) 68° and (ii) 16%
 - B (i) 19° and (ii) 16%
 - C (i) 68° and (ii) 56%
 - D (i) 16° and (ii) 68%
-

Question 58

How many matchsticks will be used to make the 5th picture in the sequence?

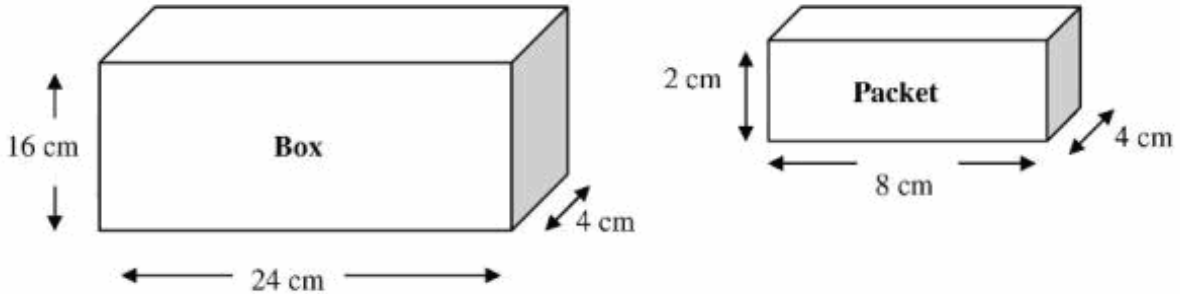


- A 14
 - B 16
 - C 13
 - D 19
-

Question 59

Packets of biscuits measuring 2 cm by 8 cm by 4 cm are packed into a box which measures 24 cm by 16 cm by 4 cm (not drawn to scale).

How many packets of biscuits will fit into the box?

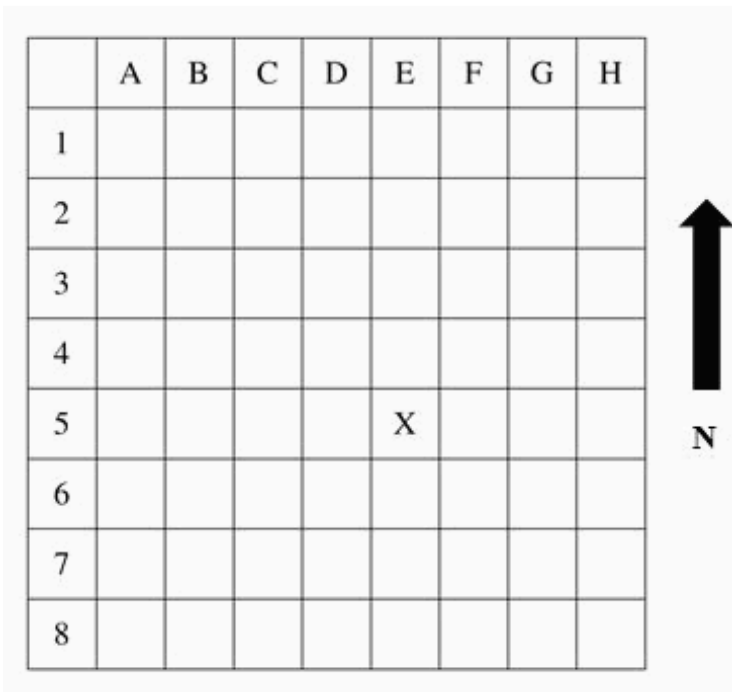


- A 28
 - B 30
 - C 24
 - D 26
-

Question 60

On the grid below, point X moves 3 blocks west, 3 blocks north and 4 blocks east.

Where does X lie after all these moves?



- A D2
 - B F2
 - C B4
 - D H6
-