

# Multiple Choice Questions

MATHEMATICS: GRADE 9

A decorative graphic at the bottom of the page consisting of several overlapping, semi-transparent geometric shapes in shades of blue and grey, creating a layered, architectural effect.

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## **INTRODUCTION:**

- **To be used by teachers to help them to achieve their goal in 2013.**
- **To be used by learners to improve their skills in answering multiple choice questions.**
- **Viva Mathematics!**

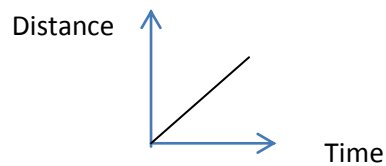
## **CONTENT:**

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- **Section B Algebra: Page 11 – 13**
- **Section C Geometry: Page 14 – 19**
- **Section D Data Handling and Probability: Page 20 – 24**
- **Section E Memorandum: Page 25**

## SECTION A: NUMBERS AND NUMBER OPERATIONS

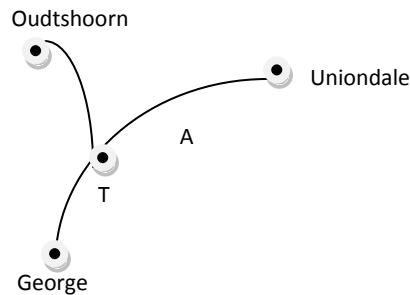
- 1  $6 \times 111 - 3 \times 111$  are equal to:  
A 222      B 333      C 444      D 555      E 666
- 2 If the fractions are arranged from lowest to highest then the middle fraction is:  
 $\frac{1}{3}; 31\%; \frac{3}{10}; 0,313; 0,303$   
A  $\frac{1}{3}$       B 0,313      C  $\frac{3}{10}$       D 31%      E 0,303
- 3 "Zappy Stores" gives customers four points for every R75 spent. Thandeka earned 36 points. How much did Thandeka spend at Zappy Stores?  
A R375      B R450      C R525      D R600      E R675
- 4 The number  $\frac{1}{3} \times \frac{1}{2} \div \frac{1}{3}$  is equal to:  
A  $\frac{1}{2}$       B 1      C 2      D  $\frac{1}{4}$       E  $\frac{3}{4}$
- 5 A three-digit number is divisible by 8, 12 and 30. The smallest possible number is:  
A 108      B 120      C 240      D 360      E 480
- 6 The hundreds digit of the product  $7777 \times 9999$  is:  
A 2      B 3      C 4      D 5      E 6
- 7 Each child of the Dicks family has at least three sisters and at least one brother. The minimum number of children in this family is:  
A 4      B 5      C 6      D 7      E 8
- 8 The number of whole numbers that lie between  $4^2$  and  $4^3$  is:  
A 45      B 46      C 47      D 48      E 49
- 9 A watch keeps exact time, but it has only an hour hand. When the hour is  $\frac{2}{5}$  of the distance between the 4 and the 5, the correct time is:  
A 04:10      B 04:20      C 04:22      D 04:24      E 04:26
- 10 The sum of the smallest and the largest of the numbers 0, 5129; 0,9; 0,89 and 0,289 is:  
A 1,189      B 0,8019      C 1,428      D 1,179      E 1,4129

- 11 The graph below represents the motion of a car. The graph shows us that the car is:



- A accelerating  
B standing still  
C travelling north-east  
D travelling uphill  
E travelling at a constant speed
- 12 An approximate value for  $\frac{302,476 \times 0,040328}{5,96247}$  is:  
A 2                      B 10                      C 200                      D 20 000                      E 10 000
- 13 The last (units) digit of the number  $333^{444}$  is:  
A 1                      B 5                      C 3                      D 7                      E 9
- 14  $4^{n+1} + 4^{n+2}$  equals  
A  $8^{2n+3}$                       B  $4^{2n+3}$                       C  $5 \times 2^{2n+2}$                       D  $5 \times 4^{2n+3}$                       E  $5 \times 4^{n+3}$
- 15 A motorist covers 177,5 km in 2 hours. On the open road he averages 105 km/h and 40 km/h in urban areas. How many minutes did he take to pass through the urban areas?  
A 60                      B 45                      C 30                      D 15                      E 75
- 16 15% of R560 – 15% of R500 is:  
A R13                      B R12                      C R11                      D R10                      E R9
- 17 If the numbers  $\sqrt[3]{9}$ ;  $\sqrt{5}$ ; 1; 2; 3 are arranged in order of magnitude, then the middle number is:  
A  $\sqrt[3]{9}$                       B  $\sqrt{5}$                       C 1                      D 2                      E 3
- 18 The six-digit number  $4m61n2$  is divisible by both 11 and 4. The number of different combinations of  $m$  and  $n$  that satisfy the above condition are:  
A 4                      B 6                      C 8                      D 10                      E 12
- 19 The greatest number of Fridays that can occur in a 75 day period is:  
A 15                      B 13                      C 12                      D 11                      E 9

- 20 The map shows roads joining Uniondale, George and Oudtshoorn via a T-junction at T. At point A is a sign which shows that A is 34 km from T, 60 km from George and 68 km from Oudtshoorn via T. The distance, in kilometre, via T, from Oudtshoorn to George is:



- A 148      B 122      C 60      D 78      E 52
- 21 On earth there are about 10 000 000 000 000 000 ants and 6 000 000 000 humans. The ratio of humans to ants is approximately equal to:
- A 60 000 to 1  
 B 1 666 667 to 1  
 C 1 to 6 000  
 D 1 to 1 666 667  
 E 1 to 60 000 000
- 22 It takes a car 11 minutes to travel a distance of 15 kilometres. If the car travels at an average speed of  $x$  km/h, then:
- A  $50 \leq x < 60$   
 B  $60 \leq x < 70$   
 C  $80 \leq x < 90$   
 D  $90 \leq x < 100$
- 23 Three different digits are used to make all possible three-digit numbers. Of the three digits, one is 4 and one is three more than the other. If the sum of all such three-digit numbers is 2886, then the three digits are:
- A 1; 2; 4      B 4; 5; 7      C 3; 4; 6      D 2; 4; 5      E 4; 6; 9
- 24 A women walk for three hours without stopping, first up a hill at 3 km/h and then back to her starting point at 6 km/h following the same route. What was the total distance that she walked?
- A 12,5      B 6      C 9      D 18      E 12

25 The compound interest on R10 000 at 20% per year calculated over a period of three years is:

- A 7 280      B 3640      C 364      D 728      E 17280

26 The value of  $\sqrt{\frac{1600}{0,1 \times 0,1}}$  is:

- A 0,4      B 4      C 40      D 400      E 4000

27 The number of times the hour hand and the minute hand of a clock form a right angle with each other between 06:00 and 12:00 on the same day, is:

- A 12      B 11      C 10      D 6      E 5

28 Mary was given a task of removing all multiples of 2 and 3 from a set of numbers from 1 to 100. The number of the remaining numbers was:

- A 17      B 33      C 18      D 34      E 26

29 A sewing machine stitches 0,6 kilometres of cloth in one hour. The rate of stitching in metres per minute is:

- A 0,01      B 0,1      C 1      D 10      E 100

30 The number 36 is 12% of:

- A 250      B 300      C 350      D 400      E 450

31 The last digit of the number  $3^{100}$  is:

- A 0      B 1      C 3      D 7      E 9

32 A 24 hour digital watch shows  $\boxed{19 : 29 : 00}$  on its face. The first two digitals indicate the hours, the second two digitals the minutes and the final two digitals the seconds past midnight. The number of minutes before it shows  $\boxed{00 : 00 : 00}$  is:

- A 271      B 529      C 431      D 291      E 531

33 The closest answer to  $\frac{2,001 \div 2,000}{1,999}$  is:

- A  $\frac{1}{4}$       B  $\frac{1}{2}$       C 1      D  $\frac{1}{8}$       E  $\frac{3}{8}$

34 Which of the following is false, if  $\frac{3}{5} = \frac{2}{x}$ ?

- A  $\frac{x}{2} = \frac{5}{3}$       B  $\frac{x}{5} = \frac{2}{3}$       C  $\frac{3}{2} = \frac{5}{x}$       D  $\frac{3}{x} = \frac{5}{2}$       E  $3x = 10$

- 35 The value of  $\sqrt{64x^{64x^2}}$ , if  $x \neq 0$ , is:
- A  $8x^{8x}$       B  $8x^{16x}$       C  $8x^{8x^2}$       D  $8x^{32x^2}$       E  $64x^{32x^2}$
- 36  $2,012 + 201, 2$  are:
- A 203,32      B 203,032      C 201,32      D 203,212      E 202,312
- 37 If the square roots of the natural numbers from 1 to 200 are calculated, the number of whole numbers will be:
- A 10      B 11      C 12      D 13      E 14
- 38 The number of positive even factors of 18 is:
- A 0      B 1      C 2      D 3      E 6
- 39 John can dig the garden in 30 minutes, while Jack takes 20 minutes. If they work together they will work:
- A 10 min      B 12 min      C 15 min      D 25 min      E 50 min
- 40 Dan caught 40 fish in five days. Every day he caught 3 fish more than the previous day. The number of fish he caught on the third day is:
- A 8      B 9      C 10      D 11      E 14
- 41 When a certain whole number is divided by 9, the quotient is 6 with a remainder. When the same number is divided by 4, the quotient is 15 with a remainder that is a quarter of the previous remainder. The whole number is:
- A 56      B 57      C 58      D 62      E 63
- 42 South America and Africa are drifting apart at 30 cm per century. The millimetres per week that it is drifting apart are:
- A 60      B 30      C 6      D 0,6      E 0,06
- 43 John says a number out loud; Jane doubles it but Rebecca multiplies it by 5 and then subtracts 6. Both girls get the same result. The number John mentioned was:
- A 5      B 4      C 3      D 2      E 1
- 44 The final amount if R450 is increased by 10% and then decrease by 15% is:
- A R490      B R472,50      C R475      D R420,75      E R427,50

45 It takes one man 6 hours to paint a 3m by 12 m wall. The time that 4 men will paint a 6m by 12m wall, will be:

- A 3 hours      B 2 hours      C 4 hours      D 12hours      E 24hours

46  $3^2 \cdot 5^3$  is equivalent to:

- A 3.3.5.5.5      B 6.15      C 3.3.5.5      D 15.15      E 9.15

47 The chart shows the number of symphony tickets sold by 11:00 on Thursday.

Time	Number of tickets
09:00 – 09:29	65
09:30 – 09:59	78
10:00 – 10:29	94
10:30 – 11:00	36

The total number of tickets sold before 10:30 is:

- A 143      B 237      C 273      D 723      E 78

48 0,821 expressed as a percentage is:

- A 0,821%      B 8,21%      C 82,1%      D 821%      E 8%

49  $(7 + 3) \times 4$  are:

- A  $(7 \times 4) + (3 \times 4)$   
B  $7 + (3 \times 4)$   
C  $7 + (3 + 4)$   
D  $(7 + 4) \times (3 + 4)$   
E  $(7 + 3) + 4$

50 Martin bought a package of 15 chocolates for R27, 96. He used the equation  $15d = 27, 96$  to find the cost of one chocolate, d. The equivalent to this equation is:

- A  $d = 27,96 - 15$   
B  $d = (27,96) (15)$   
C  $d = 27,96 + 115$   
D  $d = \frac{27,96}{15}$   
E  $d = 27,96 + 15$

51 A train travelling at an average speed of 53 km per hour. At this rate of speed, the estimate time for the train to travel 279 km is:

- A 4h      B 5h      C 8h      D 11h      E 13h



52 According to the box label, 8 crackers contain 3 grams of sugar. The proportion of G, the number of grams of sugar in 20 crackers will be:

A  $\frac{3}{8} = \frac{G}{20}$     B  $\frac{8}{G} = \frac{20}{3}$     C  $\frac{8}{28} = \frac{G}{3}$     D  $\frac{20}{8} = \frac{3}{G}$     E  $\frac{28}{3} = \frac{20}{G}$

53 Lindiwe watched a movie for  $2\frac{1}{4}$  hours, played soccer for  $1\frac{1}{2}$  hours and washed the dishes for  $\frac{3}{4}$  hour. The total time she spent on these tasks is:

A  $2\frac{1}{2}$  h    B  $3\frac{3}{4}$  h    C  $4\frac{1}{2}$  h    D 5 h    E 2 h

54 The winning time in a swimming race was 0, 89 seconds faster than the second-place time of 57, 47 seconds. The winning time was:

A 56,58    B 57,58    C 58,36    D 59,36    E 57,47

55 The group of decimals in ascending order is:

- A 261,2; 261,3; 261,342; 261,4
- B 261,2; 261,3; 261,4; 261,342
- C 261,342; 261,4; 261,3; 261,2
- D 261,4; 261,342; 261,3; 261,2
- E 261,03; 261, 30; 261,33; 261,003

56 Which group of fractions is in descending order?

- A  $\frac{2}{3}$ ;  $\frac{3}{4}$ ;  $\frac{5}{8}$ ;  $\frac{5}{6}$
- B  $\frac{5}{8}$ ;  $\frac{2}{3}$ ;  $\frac{3}{4}$ ;  $\frac{5}{6}$
- C  $\frac{2}{3}$ ;  $\frac{3}{4}$ ;  $\frac{5}{6}$ ;  $\frac{5}{8}$
- D  $\frac{5}{6}$ ;  $\frac{3}{4}$ ;  $\frac{2}{3}$ ;  $\frac{5}{8}$
- E  $\frac{2}{3}$ ;  $\frac{1}{2}$ ;  $\frac{3}{4}$ ;  $\frac{4}{5}$

57 The price of a car decrease by 25% over an 8-month period. To find the amount of the decrease in a car originally priced at R238 000, multiply R238 000 by:

A  $\frac{1}{20}$     B  $\frac{1}{5}$     C  $\frac{1}{4}$     D  $\frac{1}{10}$     E  $\frac{4}{5}$

58 Siphon memorized 5 out of 7 songs for a music competition. What percent of the songs did he memorize?

A 40%    B 55%    C 65%    D 71%    E 85%

59 Audrey has R5 000 in her savings account that earns 3,75% annual interest. What is a reasonable estimate of interest she will earn in 1 year?

- A R500      B R400      C R300      D R200      E R100

60  $(-2x^2)^3$  is equivalent to:

- A  $8x^5$       B  $-2x^6$       C  $8x^6$       D  $8x^5$       E  $-8x^6$

61 A book that normally sells for R35 is on sale at 25% off. The best estimate sale price is:

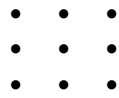
- A R9      B R32      C R26      D R43      E R31

62 120% of Ellie's weight equals 75% of James' weight. The ratio of Ellie's weight to James' weight is:

- A  $\frac{5}{8}$       B  $\frac{5}{6}$       C  $\frac{1}{5}$       D  $\frac{4}{39}$       E  $\frac{8}{13}$



- 7 Nine points lie in a plane, as shown above. If any three points are joined to form a triangle, then the numbers of all possible triangles that can be drawn are:



- A 22      B 24      C 26      D 32      E 34

- 8 If  $(x - 1)(x + 2) = 0$ , then  $x$  is:

- A -1 or 2      B 1 or -2      C 1      D -2      E 0

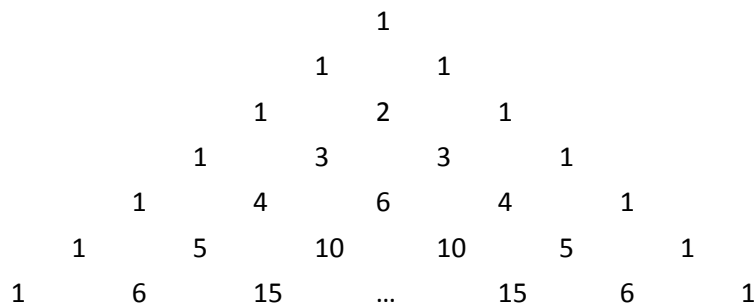
- 9 The equation  $(a + b)^2 = a^2 + b^2$  is:

- A False for all values of  $a$  and  $b$   
 B Is true only if  $a = b = 0$   
 C Is true if both  $a$  and  $b$  are equal to 1  
 D Is true if at least one of  $a$  or  $b$  is 0  
 E Is true for all values of  $a$  and  $b$

- 10 Leon calculates the value of  $n^2 + n - 1$  for  $n$  values from 2 up to 10. The number of prime numbers is:

- A 0      B 1      C 2      D 3      E More

- 11 The missing number in the following sequence is:

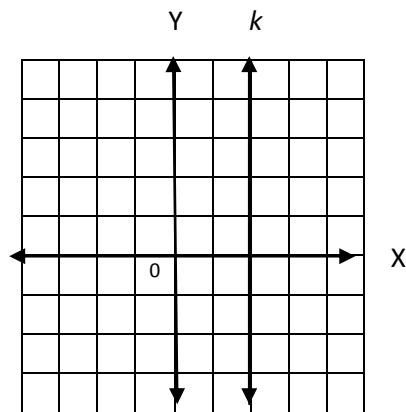


- A 5      B 20      C 21      D 10      E 425

- 12 The 20<sup>th</sup> term of the sequence 5; 11; 17; ... is:

- A 100      B 119      C 121      D 139      E 141

- 13 The equation of line  $k$  is:



- A  $x = 2$       B  $x = -2$       C  $y = 2$       D  $y = -2$       E  $y = x$

- 14 Which expression is equivalent to  $2x + 4 = 8$ ?

- A  $2x + 4 - 4 = 8 + 4$   
 B  $2x + 2 = 4$   
 C  $6x = 8$   
 D  $2x + 4 - 4 = 8 - 4$   
 E  $2x = 2$

- 15  $(7x^2 + 3y) - (3x^2 + 5y)$  is equivalent to:

- A  $4x^2 - 2y$       B  $4x^4 - 2y^2$       C  $4x^2 + 8y$       D  $4x^4 + 8y^2$       E  $2x^2y$

- 16 If  $b$  is a real number such that  $b^2 = b + 1$ . Then which of the following is NOT true?

- A  $b^3 = b^2 + b$   
 B  $b^4 = b^3 + b + 1$   
 C  $b^3 = 2b + 1$   
 D  $b^3 + b^2 = b + 1$   
 E  $b = \frac{1}{b-1}$

- 17 If  $a + b = -3$  and  $ab = 4$ , then  $a^3 + b^3$  equals:

- A 6      B  $3\sqrt{2}$       C 5      D  $\frac{-3 + 2\sqrt{2}}{4}$       E 9

- 18 The value of  $m$  in  $-3(m - 2) > 12$ , is:

- A  $m > -2$       B  $m < 2$       C  $m > 2$       D  $m < -6$       E  $m < -2$

- 19 The gradient of the graphs defined by  $x - 2y + 5 = 0$ , is:

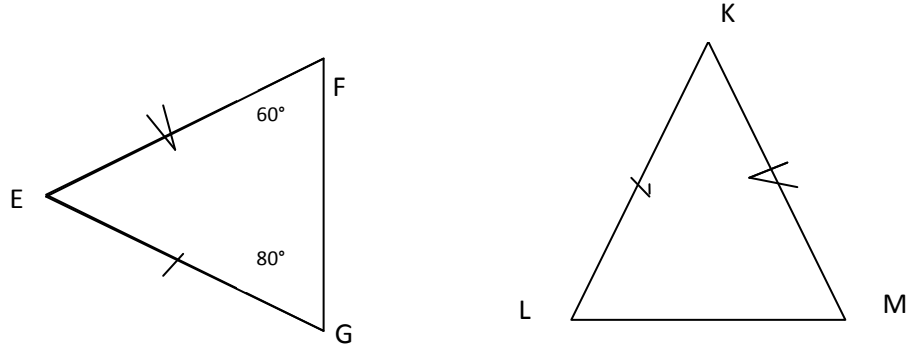
- A  $m = 1$       B  $m = -1$       C  $m = \frac{1}{2}$       D  $m = -\frac{1}{2}$       E  $m = -2$

- 20 The  $x$ -intercept of the graph defined by  $y = \frac{5}{2}x - 1$ , is:

- A 0,4      B 2,5      C 1      D -1      E -0,4

## SECTION C: GEOMETRY

- 1  $\triangle EFG$  is similar to  $\triangle KLM$ . The size of  $\hat{M}$  is:



- A  $40^\circ$       B  $60^\circ$       C  $70^\circ$       D  $80^\circ$       E  $30^\circ$

- 2  $\triangle ABC$  is a right triangle with  $AB = 26\text{cm}$  and  $BC = 15\text{cm}$ . The length of the hypotenuse is:

- A 21cm      B 26cm      C 30cm      D 52cm      E 41cm

- 3 The diagonal of a rectangular cardboard with a length of 40cm and a width of 30cm, is:

- A 60cm      B 35cm      C 50cm      D 25cm      E 70cm

- 4 A quadrilateral with one pair of opposite sides parallel is called a:

- A pentagon
- B triangle
- C trapezium
- D kite
- E rectangle

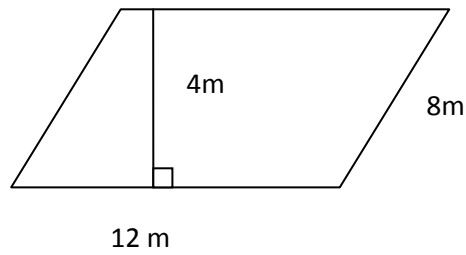
- 5 Janet made apple sauce to fill a cylindrical jar with a radius of 5 cm and a height of 12 cm. If she makes the same amount of sauces and places it in a jar with the same radius but half the volume, how tall should the new jar be?

- A 9cm      B 8cm      C 7cm      D 6cm      E 5cm

- 6 The circumference of a circle with radius 2 is:

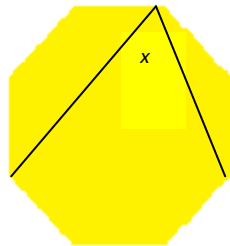
- A  $\pi$       B  $2\pi$       C  $4\pi$       D  $6\pi$       E  $8\pi$

7 What is the area of the parallelogram?



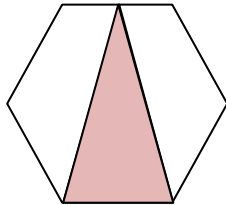
- A  $38\text{m}^2$       B  $42\text{m}^2$       C  $48\text{m}^2$       D  $54\text{m}^2$       E  $32\text{m}^2$

8 In the given regular octagon, the size  $x$  in degrees, is:



- A  $22\frac{1}{2}$       B 45      C  $67\frac{1}{2}$       D 90      E  $112\frac{1}{2}$

9 The area of the shaded triangle, written as a fraction of the regular hexagon is:

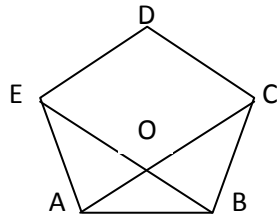


- A  $\frac{1}{6}$       B  $\frac{1}{5}$       C  $\frac{1}{4}$       D  $\frac{1}{3}$       E  $\frac{1}{2}$

10 Rectangle ABCD has sides AB and BC in the ratio 3: 1. If the diagonal AC is 5, then the area of the rectangle is:

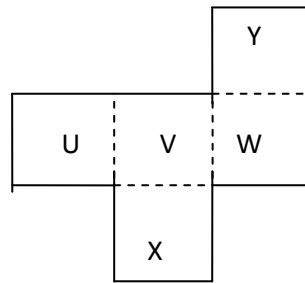
- A 9      B  $\frac{15}{2}$       C 8      D 10      E  $\frac{20}{3}$

- 11 If ABCDE is a regular pentagon and EB and AC intersect at O, then the size of angle  $\widehat{EOC}$  in degrees is:



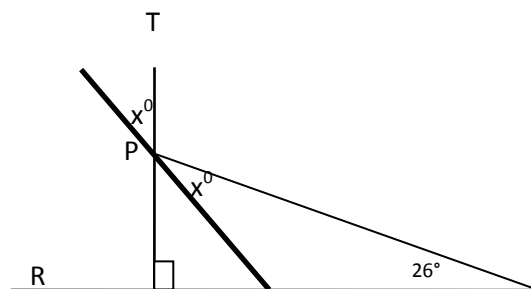
- A 100      B 108      C 135      D 96      E 90

- 12 A piece of paper is cut out and labelled as shown in the diagram. It is folded along the dotted lines to make an open box. If the box is placed on a table so that the top of the box is open, then the label at the bottom of the box is:



- A U      B V      C W      D X      E Y

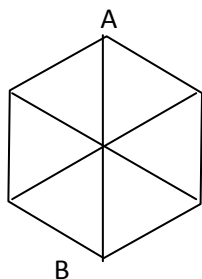
- 13 A beam of light shines from a point S, reflects off a reflector (mirror image) at point P, and reaches a point T so that PT is perpendicular to RS. The value of  $x$  is:



- A 26      B 32      C 37      D 38      E 45

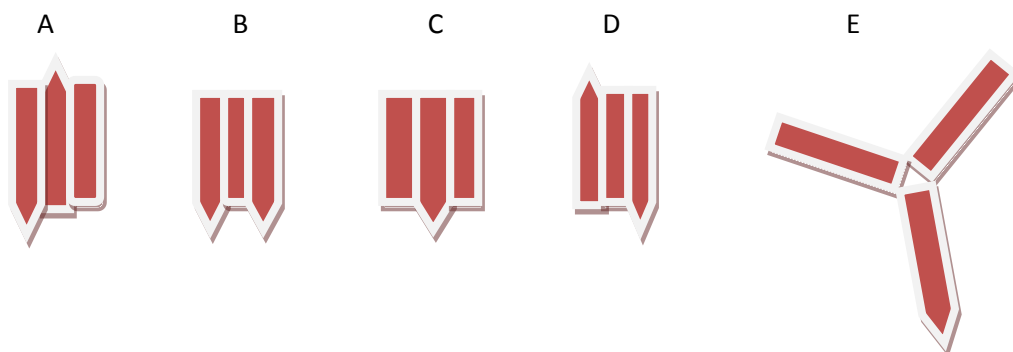


- 14 You need to travel from A to B along the lines as shown in the sketch. You may only move downwards. The number of different paths that can be taken from A to B is:

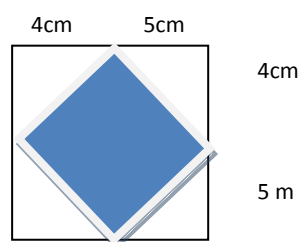


- A 9                      B 10                      C 11                      D 12                      E 13

- 15 Which net will not form a closed triangular prism?



- 16 The area of the shaded square (in  $\text{cm}^2$ ) in the diagram below is:

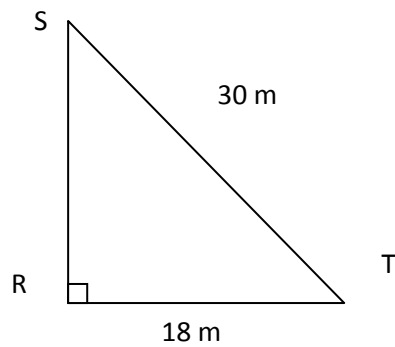


- A 20                      B 36                      C 41                      D 61                      E 81

- 17 A rectangle is divided in half so that two squares are formed. If each square has a perimeter of 36 cm, then the area of the rectangle is:

- A 36                      B 54                      C 72                      D 81                      E 162

18 Triangle RST is a right triangle. The length of RS is:



- A 26m      B 24m      C 22m      D 21m      E 48m

19 The amount of soft drink in a glass would most likely be expressed in:

- A Kiloliters
- B litres
- C centimetres
- D millimetres
- E meters

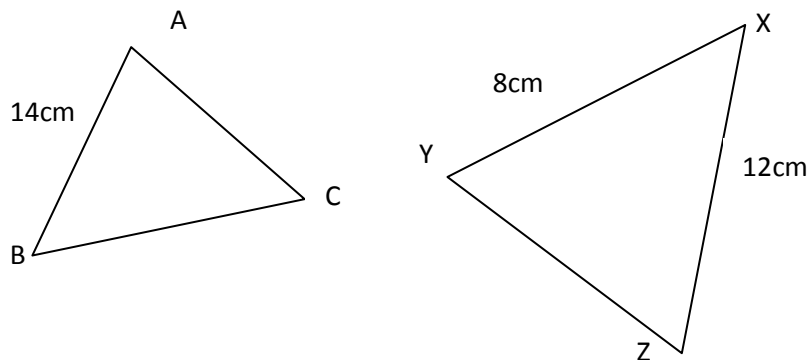
20 The Barn family plans to fence a rectangular yard that measures 32m by 56m. The length of fencing material that they would need is:

- A 88m      B 176m      C 1,792m      D 1 900m      E 1 792m

21 A closed six-sided figure is called:

- A Rectangle
- B Hexagon
- C Octagon
- D Pentagon
- E Parallelogram

22  $\triangle XYZ$  is similar to  $\triangle ABC$ . The length of AC is:

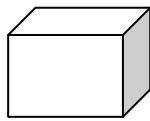


- A 9cm      B 10cm      C 20cm      D 21cm      E 18cm

23 A triangle with no equal sides is called:

- A a scalene triangle
- B a right angle
- C an isosceles triangle
- D a straight triangle
- E an quadrilateral triangle

24 Gabe made a box in the form of a cube with edges 50 cm long to use as a display table. To cover it with wallpaper he will need:



- A  $3\text{m}^2$       B  $1,5\text{m}^2$       C  $0,25\text{m}^2$       D  $1,25\text{m}^2$       E  $6\text{m}^2$

25 A scale model for a car is 8 cm long. If 2 cm represents 3 meters, what is the actual length of the car?

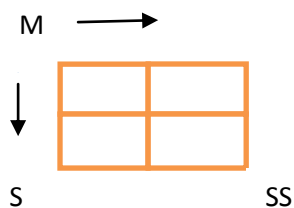
- A 6m      B 8m      C 12m      D 18m      E 16m

## SECTION D: DATA HANDLING

- 1 The test scores in Pinkie's mathematics class are shown in the table. Which represents the mean score for the class?

TEST SCORES				
88	90	98	95	98
92	88	89	85	82
78	88	87	89	86
92	91	79	95	99
85	85	83	84	90

- A 85                      B 87                      C 88,6                      D 89                      E 21
- 2 A survey was conducted in the nine grade class at Nokulunga High School. 45 students stated that they had a computer at home with e-mail access. 180 students were surveyed. In a group of 800 nine graders, which is the best prediction of how many have e-mail access?
- A 200                      B 180                      C 120                      D 110                      E 100
- 3 The high temperatures for the last 5 days in January were 31°C, 32°C, 29°C, 26°C and 32°C. The median of these temperatures are:
- A 30°C                      B 32°C                      C 31°C                      D 26°C                      E 31,5°C
- 4 A protest march goes through town from the Mall (M) to the Community Centre (CC).



- If the march can only travel east or south, then the number of different possible routes is:
- A 6                      B 10                      C 4                      D 8                      E 9
- 5 A vendor has an equal arm balance and four weights she uses to weigh her fruit. The weights are 1 kg, 2 kg, 4 kg and 8 kg. If the weights are only placed on one end of the balance and the fruit is placed on the other end, how many different weight combinations can she use?
- A 15                      B 13                      C 11                      D 9                      E 7

6 Anne, Bonggi and Carol are wearing dresses and shoes that are green, black or yellow. No two dresses or pairs of shoes are the same colour. Anne has yellow shoes. Bonggi does not have a black dress or black shoes and only Carol has the same colour dress and shoes. Bonggi has

- A a green dress and yellow shoes
- B a black dress and green shoes
- C a green dress and green shoes
- D a green dress and black shoes
- E a yellow dress and green shoes

7 A bag contains 6 blue balls, 8 yellow balls and 2 pink balls. Siphon takes balls from the bag without looking at them. The least number of balls that he must remove in order to ensure that he has three of the same colour is:

- A 3                      B 5                      C 7                      D 9                      E 11

8 A three digit number is formed by the digits 1, 2 and 3, with no digit being repeated. The probability that it will be an odd number is:

- A  $\frac{1}{4}$                       B  $\frac{1}{3}$                       C  $\frac{1}{6}$                       D  $\frac{2}{3}$                       E  $\frac{1}{2}$

9 Renee has 6 blue, 3 orange, 2 red and 7 white marbles in a bag. The probability that when she randomly selects a blue marble from the bag, is:

- A  $\frac{2}{21}$                       B  $\frac{6}{13}$                       C  $\frac{1}{3}$                       D  $\frac{1}{2}$                       E 6

10 The number of different ways the following symbols can be arranged, is:



- A 8                      B 12                      C 20                      D 24                      E 4

11 The position of a submarine changed -102 meters in 6 minutes. The average change per minute is:

- A 27m                      B 17m                      C -27m                      D -17m                      E -96m

12 Wesley has 6 green, 4 pink, 2 white and 8 blue blocks in a bag. The probability that he randomly selects a green block from the bag, is:

- A  $\frac{3}{10}$                       B  $\frac{7}{10}$                       C  $\frac{8}{10}$                       D  $\frac{9}{10}$                       E  $\frac{8}{20}$



- 16 The following records for Javelin (in m) were recorded for the years 1963 to 1983.

59,78 69,52 69,96 70,08 71,88 72,4 74,2 74,76

The range of distances is:

- A 14,98      B 70,98      C 70,3225      D 71,88      E 70,08
- 17 The results of a survey on the reasons that teens spend time as volunteers are shown in the table below:

Reason	Number of teens
To help others	47
Enjoy the work	38
Lots of free time	25
To learn	24
For a friend	20
Religion	19
Past experience	10
Other	7
Don't know	2

Out of 576 teen volunteers, how many would you expect volunteer because they enjoy the work?

- A 38      B 95      C 538      D 114      E 192
- 18 The results of a survey on the reasons that teens spend time as volunteers are shown in the table below:

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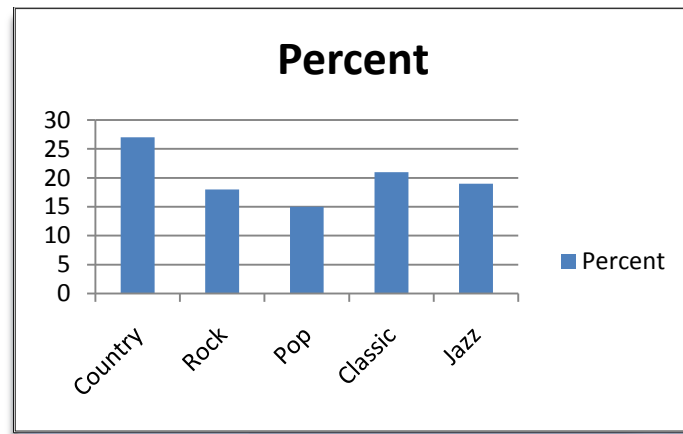
You need to draw a pie graph of the data. How many degrees of the circle will the time spend for a friend take up?

- A 13°      B 20°      C 72°      D 9°      E 47°

- 19 There are 3 blue pencils, 5 green pencils, 2 black pencils, and 6 red pencils in a drawer. Suppose you grab one pencil at random. What will the probability be that you will a grab a blue or a red pencil?

A  $\frac{3}{8}$       B  $\frac{9}{16}$       C  $\frac{3}{16}$       D  $\frac{1}{2}$       E  $\frac{2}{3}$

- 20 The bar graph shows the results of a survey to what music people listen in the car.



If you owned a store that specialised in car stereos, what type of music would you have playing?

- A Pop
- B Classic
- C Rock
- D Jazz
- E Country