



THE GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF EDUCATION

**NATIONAL CERTIFICATE OF SECONDARY
EDUCATION 2010**

(Level 1)

MATHEMATICS

PAPER 1

TIME: 90 MINUTES

Student's Name _____

School's Name _____

School's ID

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Student's Number

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INSTRUCTIONS

Read the following carefully:

1. This paper consists of forty (40) Multiple Choice items.
2. You are required to answer all questions on the answer sheet provided.
3. Fill in the following information on the answer sheet using a 2HB pencil only (if it has not been completed already):
 - School's Name and ID
 - Student's Name
 - Student's Number
 - Date of Birth
4. Record your answers by shading in the selected letter which corresponds to the question.
5. If you must change your answer, erase your first answer completely, and then shade your new answer.
6. On the answer sheet, **DO NOT**:
 - Write anything on the top and sides
 - Staple
 - Punch holes
 - Bend the corners
 - Tear
 - Make any stray marks
7. If you have finished before time is called, go back and check your work.
8. **NO CALCULATORS** are to be used.

1. The product 53×2.9 is closest to:

- (A) 50
- (B) 150
- (C) 200
- (D) 2000

2. The next number in the sequence

1, 3, 7, 13, ... is:

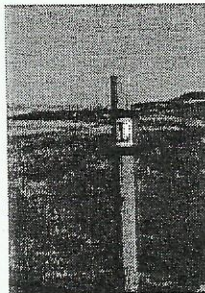
- (A) 15
- (B) 20
- (C) 21
- (D) 29

3. How much Simple Interest is due on a loan of \$2000.00 if it is to be repaid in one year and the annual rate of interest is $6\frac{3}{4}$ per cent?

- (A) \$54.00
- (B) \$135.00
- (C) \$270.00
- (D) \$540.00

4. A cylindrical wooden pole of height 4 metres has a cross-sectional area of 700 cm^2 . Calculate the volume of wood in cm^3 , in the pole.

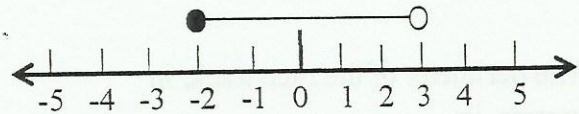
- (A) 280
- (B) 2 800
- (C) 28 000
- (D) 280 000



5. Evaluate $9 - (-5) - 2 + 3 \times 5$

- (A) 17
- (B) 25
- (C) 27
- (D) 31

6.



The integer values indicated on the Number Line above may best be represented by the set:

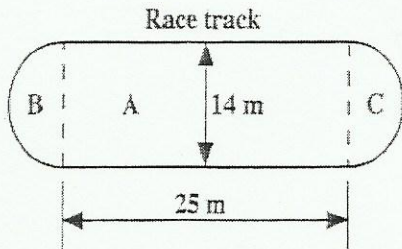
- (A) $\{-2, 2\}$
- (B) $\{-2, 3\}$
- (C) $\{-2, -1, 0, 1, 2\}$
- (D) $\{-2, -1, 0, 1, 2, 3\}$

7. The Jackson family uses an average volume of 400 litres of water per day. Water charges are paid at the rate of \$12.00 for every 1000 litres of water used. How much does the family pay for water used during the month of May which has 31 days?

- (A) \$14.60
- (B) \$124.00
- (C) \$148.80
- (D) \$175.20

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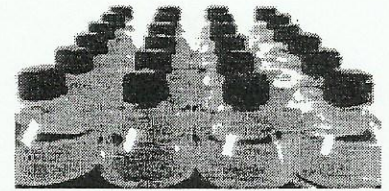
Questions 8 and 9 are based on the diagram below. The diagram represents a race track with one rectangular shape and two semi-circular shape as shown.



8. The perimeter of the race track, in metres, is:
- (A) 22
 (B) 44
 (C) 94
 (D) 112
9. Thin reflector strips are to be placed 2 metres apart along the perimeter of the race track described above. How many reflector strips would be needed?
- (A) 25
 (B) 47
 (C) 48
 (D) 56
10. When expressed in grams, 30% of 2 kilograms is:
- (A) 0.6
 (B) 6
 (C) 60
 (D) 600

11. A case of bottled drinking water contains 24 bottles. If the case of bottles is divided in the ratio 1:7, the smaller share is:

- (A) 3
 (B) 8
 (C) 9
 (D) 15



12. If $p * q$ means $p^2 - q$, then $5 * (-2) =$

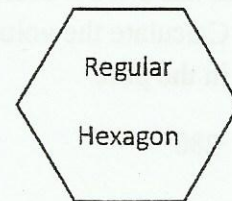
- (A) 3
 (B) 9
 (C) 23
 (D) 27

13. The sum: $1011_2 + 1001_2$ expressed as a base two numeral is

- (A) 100100_2
 (B) 100110_2
 (C) 10100_2
 (D) $\bar{1}001_2$

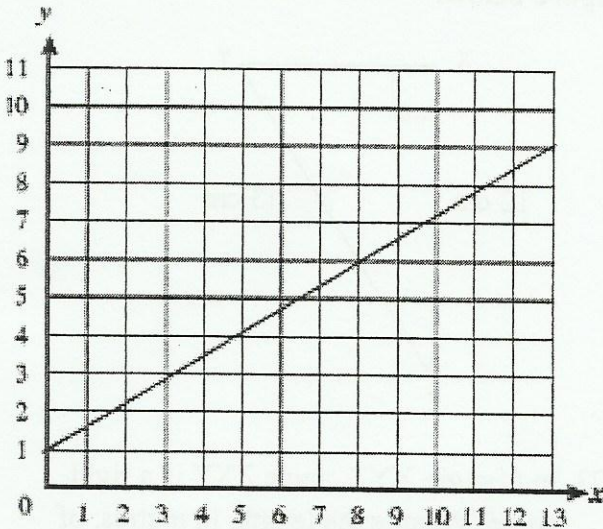
14. How many lines of symmetry are there in a regular hexagon?

- (A) 1
 (B) 2
 (C) 4
 (D) 6



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15.

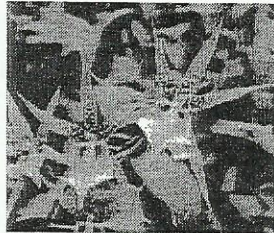


Which ordered pair below **does NOT** satisfy the relation shown in the graph above?

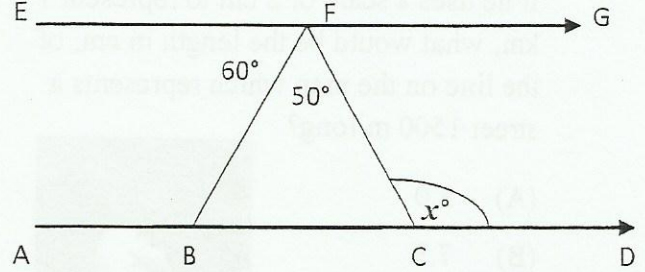
- (A) (0, 0)
- (B) (0, 1)
- (C) (8, 6)
- (D) (13, 9)

16. Kevin bought 120 orchid plants at \$20.00 each and sold them all at the rate of 3 for \$100.00. What was the percentage profit gained?

- (A) $33 \frac{1}{3}$
- (B) $66 \frac{2}{3}$
- (C) $133 \frac{1}{3}$
- (D) $166 \frac{2}{3}$



17.



In the figure above, EG and AD are parallel lines. What is the value of x , in degrees?

- (A) 50
- (B) 60
- (C) 70
- (D) 110

18. If $3(2x - 4) = -36$, the value of x is:

- (A) -8
- (B) -4
- (C) 4
- (D) 8

19. The length, L cm, of a rectangle is 4 cm more than twice its width, W cm. Which mathematical statement below correctly represents this information?

- (A) $L > 2W + 4$
- (B) $L = 2W + 4$
- (C) $L + 4 > 2W$
- (D) $2L + 4 = W$

20. A surveyor is preparing a map of a town. If he uses a scale of 2 cm to represent 1 km, what would be the length in cm, of the line on the map which represents a street 1500 m long?

- (A) 3.0
(B) 7.5
(C) 15.0
(D) 30.0



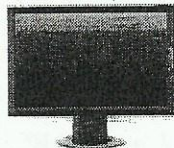
21. A pair of sunglasses was advertised for US\$40.00. If a 15% VAT tax was added, how much VAT, in TT dollars, was paid?

[Exchange Rate US\$1.00 = TT\$6.25]

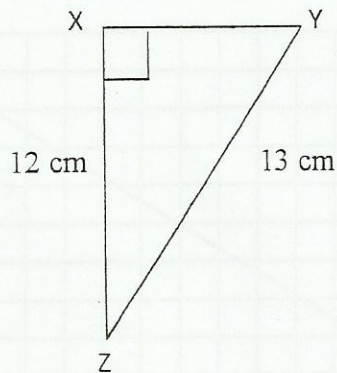
- (A) TT\$ 6.00
(B) TT\$ 6.25
(C) TT\$ 37.50
(D) TT\$ 375.00

22. A computer can be bought on Hire Purchase with a down-payment of \$ 1600 and 12 monthly installments of \$ 500. If the cash price on the computer is \$ 5600, how much more than the cash price is the Hire Purchase price?

- (A) \$ 60.00
(B) \$ 760.00
(C) \$ 1600.00
(D) \$ 2000.00



Questions 23 and 24 are based on the figure below.



23. In triangle XYZ, angle ZXY is a right angle. What is the length, in metres, of the side XY?

- (A) 5
(B) 10
(C) 20
(D) 25

24. The value of $\sin \hat{ZYX}$ is:

- (A) 0
(B) 12/13
(C) 1
(D) 13/12

25. When factorized, $x^2 - 36$ expressed as a product of factors is:

- (A) $(x + 6)(x - 6)$
(B) $(x - 1)(x + 36)$
(C) $(x + 1)(x - 36)$
(D) $(x - 6)(x + 6)^2$

Use the information in the following table to answer questions 26 and 27.

The table below shows the number of text messages received by students in a class.

Number of text messages received	0	2	4	5	10	14
Number of students	0	5	7	6	2	4

26. The **total** number of text messages received is:

- (A) 6
- (B) 35
- (C) 108
- (D) 144

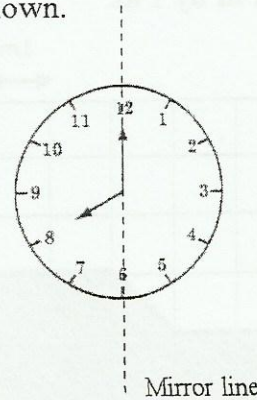
27. The modal number (*i.e. the mode*) of text messages received is:

- (A) 2
- (B) 4
- (C) 5
- (D) 10

28. A water taxi travels at a steady speed of 96 km per hour between the cities of San Fernando and Port-of-Spain. If a one-way journey from San Fernando to Port-of-Spain takes 30 minutes, the distance travelled between the two cities, in km, is:

- (A) 32
- (B) 48
- (C) 96
- (D) 126

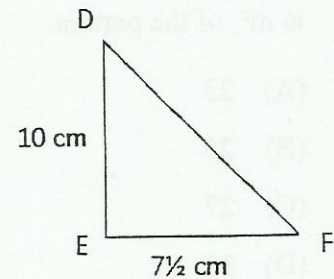
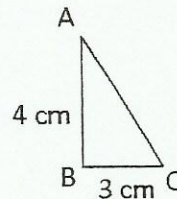
29. The hands of the clock in the diagram below are reflected in the vertical mirror line shown.



The time shown in the image will be

- (A) 2 o'clock
- (B) 4 o'clock
- (C) 6 o'clock
- (D) 10 o'clock

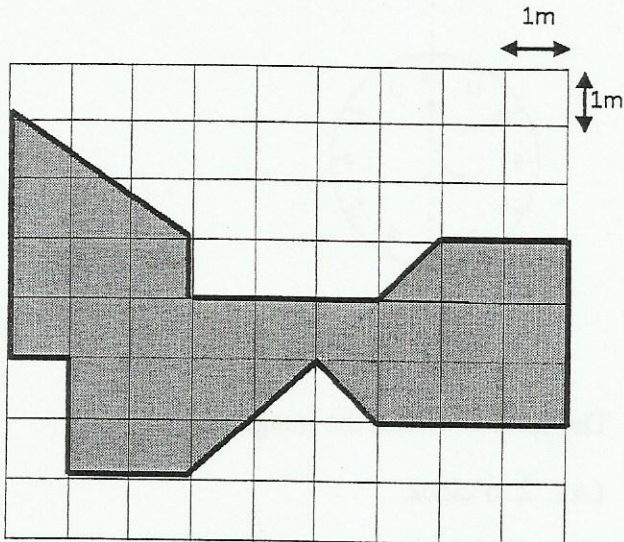
30.



Triangle EFD is an enlargement of triangle ABC. The scale factor of the enlargement is:

- (A) $\frac{2}{5}$
- (B) $\frac{2}{3}$
- (C) $\frac{5}{3}$
- (D) $\frac{5}{2}$

Questions 31 and 32 are based on the figure below. The grid is made up of squares measuring 1 m by 1 m.



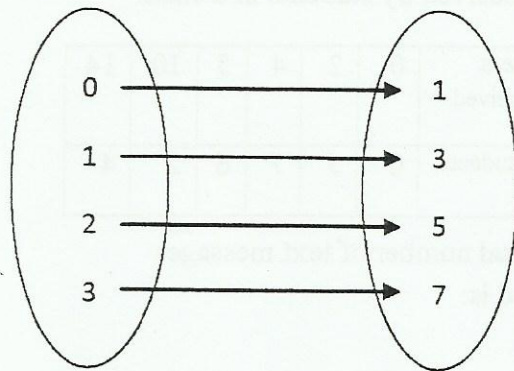
31. The shaded shape on the grid above represents a pattern on a wall. Using the grid dimensions given, estimate the area in m^2 , of the pattern.

- (A) 23
- (B) 25
- (C) 27
- (D) 30

32. If the shaded pattern is to be completely covered using square tiles of dimensions 20 cm by 20 cm. Approximately, how many tiles would be needed?

- (A) 260
- (B) 625
- (C) 700
- (D) 750

Use the information in the arrow diagram presented below to answer questions 33 and 34.



Set A

Set B

33. The relation presented on the arrow diagram may be defined by the rule:

- (A) $x \rightarrow 2x + 1$
- (B) $x \rightarrow x + 2$
- (C) $x \rightarrow 3x - 1$
- (D) $x \rightarrow x^2$

34. The range of the relation is

- (A) $\{0, 1, 2\}$
- (B) $\{1, 4, 8\}$
- (C) $\{0, 1, 2, 3\}$
- (D) $\{1, 3, 5, 7\}$

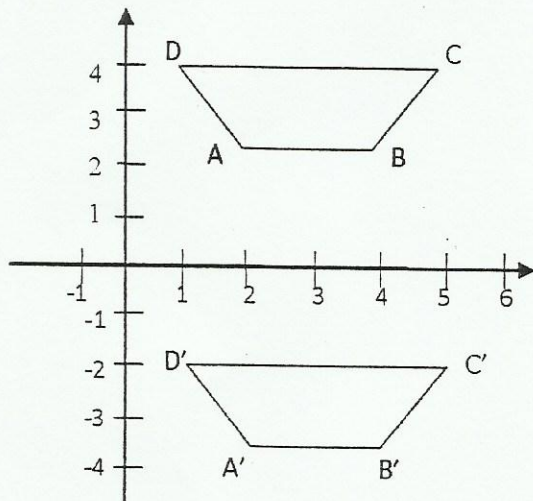
35. Simplify $\frac{8p+6}{2}$

- (A) $4p + 3$
- (B) $4p + 6$
- (C) $8p + 3$
- (D) $8p + 6$

36. The cost of a ream of photocopying paper was increased by 10% to \$44.00. The original price, when rounded off to the nearest dollar is:

- (A) \$34
- (B) \$36
- (C) \$40
- (D) \$46

37. The figure below shows a trapezium ABCD and its image A'B'C'D' after undergoing a **single** transformation.



The above transformation is

- (A) A translation of 4 units downwards
- (B) A translation of 4 units upwards
- (C) A translation of 6 units downwards
- (D) A translation of 6 units upwards

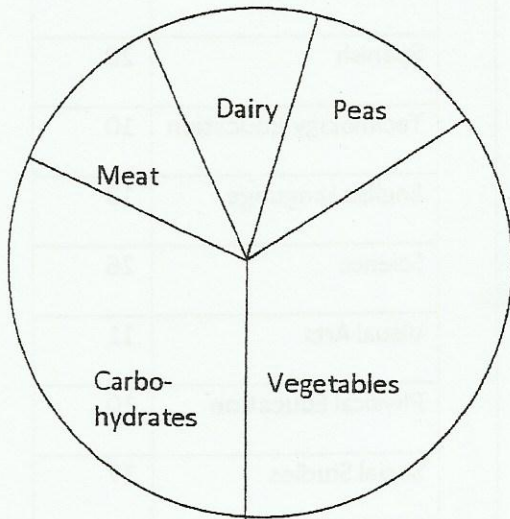
38. Janet's report card:

Subject	Mark
Mathematics	11
Spanish	20
Technology Education	10
English Language	13
Science	26
Visual Arts	11
Physical Education	10
Social Studies	17
Moral Education	10

The report card above presents the marks that Janet scored in the various subjects taken. What is the probability of her scoring 10 in a subject?

- (A) $\frac{1}{10}$
- (B) $\frac{1}{9}$
- (C) $\frac{1}{3}$
- (D) $\frac{1}{2}$

Questions 39 and 40 are based on the figure below.



39. The Pie Chart shows the foods in a meal which comprises **equal amounts** (by mass) of carbohydrates and vegetables; also, **equal amounts** of meat, dairy and peas. If dairy represents an angle of 40° , then the angle represented by vegetables is

- (A) 120°
- (B) 150°
- (C) 180°
- (D) 240°

40. Allie ate an entire plate of food. If she had 60 grams of meat, what mass, in grams, of vegetables did she eat?

- (A) 60
- (B) 120
- (C) 150
- (D) 180

END OF TEST