



THE GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO

MINISTRY OF EDUCATION

**NATIONAL CERTIFICATE OF SECONDARY
EDUCATION 2011
(Level 1)**

MATHEMATICS

PAPER I

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 questions.
2. You are required to answer all questions on the Multiple Choice answer sheet provided.
3. Fill in the following information on the Multiple Choice 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 on the Multiple Choice answer sheets provided 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 value of the digit 6 in the numeral 5.642 is

- (A) 6 hundredths
- (B) 6 tenths
- (C) 6 ones
- (D) 6 tens

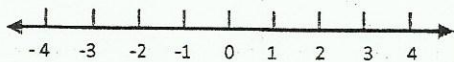
2. Evaluate $55 - 15 \div 5 + 3$

- (A) 5
- (B) 11
- (C) 48
- (D) 55

3. What is the H.C.F of 16, 32 and 40?

- (A) 2
- (B) 4
- (C) 8
- (D) 16

4.



The number of integers which lie between -3 and 3 on the Number Line above is

- (A) 3
- (B) 4
- (C) 5
- (D) 7

5. The sum of two positive integers is 18 and their difference is 2.

The larger number is

- (A) 8
- (B) 10
- (C) 12
- (D) 16

6.

<p>RECIPE FOR 10 PANCAKES</p> <p>250 g flour</p> <p>3 eggs</p> <p>$\frac{1}{2}$ cup milk</p>
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Using this recipe, how many cups of milk will be required to make 25 pancakes?

- (A) 1
- (B) $1\frac{1}{4}$
- (C) $1\frac{1}{2}$
- (D) 2

7. If set $A = \{1, 3, 5\}$, then the number of possible subsets of set A is

- (A) 3
- (B) 4
- (C) 6
- (D) 8

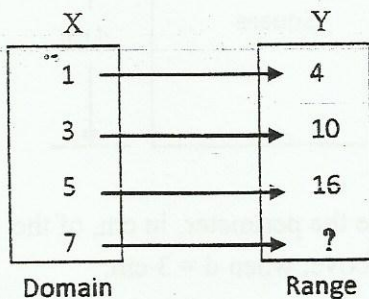
8. If $P = \{2, 4, 6, 8\}$
and $Q = \{a, b, c, d\}$,
then the sets P and Q may be described
as sets which are

- (A) Equal
- (B) Equivalent
- (C) Intersecting
- (D) Infinite

9. A straight line with gradient -2 and
passing through the origin (0,0), can be
represented by the equation

- (A) $y = 2$
- (B) $y = -2$
- (C) $y = 2x$
- (D) $y = -2x$

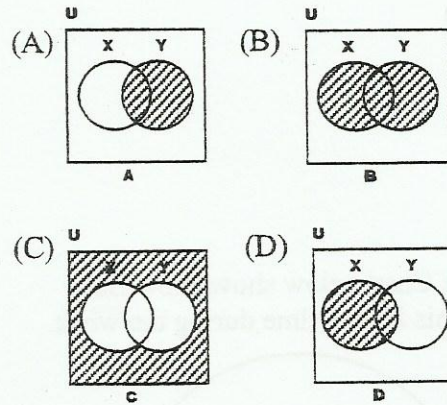
10. The diagram below shows a relation
between a Domain X and a Range Y.



What is the value of the missing
number in the diagram?

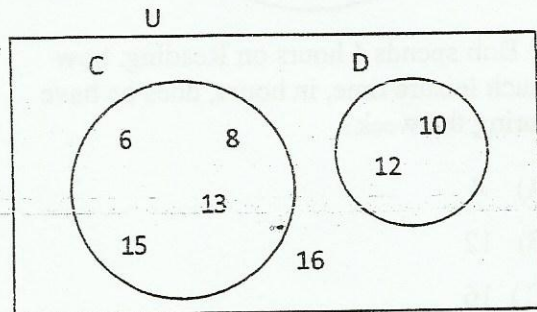
- (A) 14
- (B) 20
- (C) 22
- (D) 49

11. In which Venn Diagram below does the
shaded region represent $(X \cup Y)'$?



Questions 12 and 13 refer to the following
information:

The Venn diagram below shows the
elements contained in set C and set D.



12. How many elements are there in the
set $C \cap D$?

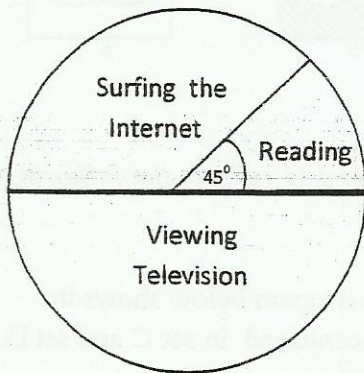
- (A) 0
- (B) 1
- (C) 6
- (D) 7

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13. How many elements are there in the set $(C \cup D)'$?

- (A) 0
- (B) 1
- (C) 6
- (D) 7

14. The Pie Chart below shows how Bob spends his leisure time during the week.



If Bob spends 4 hours on Reading, how much leisure time, in hours, does he have during the week?

- (A) 4
- (B) 12
- (C) 16
- (D) 32

15. Which one of the following ordered pairs below best satisfies the equation: $y = x - 2$?

- (A) (5,3)
- (B) (4,2)
- (C) (3,5)
- (D) (2,4)

16.

9, 8, 8, 11, 8, 6, 20

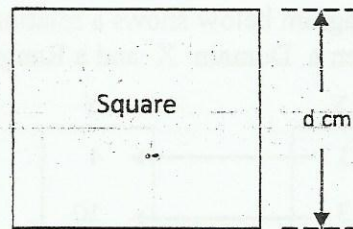
The median of the above data set is

- (A) 8
- (B) 9
- (C) 11
- (D) 15

17. What is the value of x if $\frac{2x}{3} = \frac{8}{5}$?

- (A) $\frac{5}{12}$
- (B) $\frac{4}{5}$
- (C) $\frac{4}{12}$
- (D) $\frac{12}{5}$

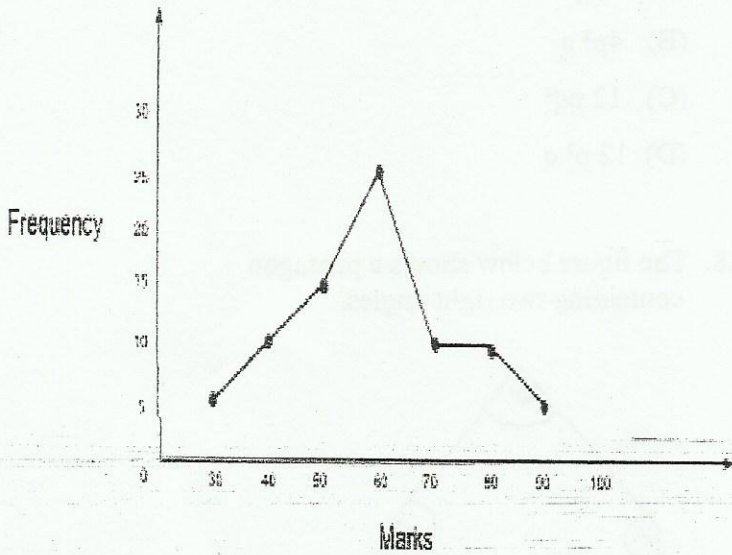
18.



Calculate the perimeter, in cm, of the square above, when $d = 3$ cm.

- (A) 3
- (B) 6
- (C) 9
- (D) 12

Questions 19 and 20 are based on the Line Graph below.



The Line Graph represents the marks obtained by a group of students in a Reading test.

19. What is the **modal mark** or **mode**?
- (A) 10
 (B) 25
 (C) 60
 (D) 90
20. If the pass mark for the test was 50 marks, how many students passed the test?
- (A) 15
 (B) 50
 (C) 65
 (D) 80

21. A welder works 8 hours a day at a rate of \$25.00 per hour. The overtime rate is doubled the normal rate. On a particular day, the welder works 15 hours. The **overtime** pay for that day is
- (A) \$200
 (B) \$350
 (C) \$375
 (D) \$550

22. Simplify $5a + b - 3a + 2b$
- (A) $5b$
 (B) $-2ab$
 (C) $2a - b$
 (D) $2a + 3b$

Questions 23 and 24 are based on the data presented below.

Number of visits	0	1	2	3	4	5
Frequency	3	2	7	4	8	6

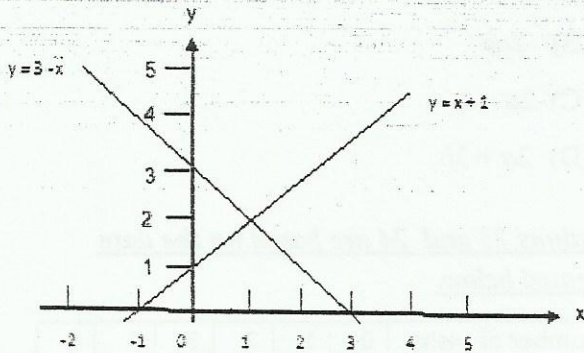
The frequency table shows the number of visits made by the students of Form 1P to the school cafeteria on Monday.

23. The mean number of visits made by the students to the cafeteria is
- (A) 2
 (B) 3
 (C) 4
 (D) 6

24. What is the probability that a student chosen at random would have visited the cafeteria 5 times?

- (A) $\frac{1}{6}$
- (B) $\frac{1}{5}$
- (C) $\frac{1}{3}$
- (D) $\frac{4}{5}$

25.



The co-ordinates of the point of intersection of the straight lines $y = 3 - x$ and $y = x + 1$ are best represented by

- (A) (-1, 0)
- (B) (0, 3)
- (C) (1, 2)
- (D) (2, 1)

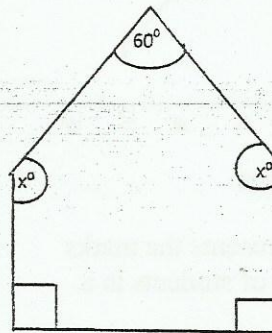
26. If $3(x - 3) = 24$, then $x =$

- (A) 4
- (B) 7
- (C) 9
- (D) 11

27. Simplify $\frac{12p^2 \times 3q^3}{3pq}$

- (A) $4pq^2$
- (B) $4p^2q$
- (C) $12pq^2$
- (D) $12p^2q$

28. The figure below shows a pentagon containing two right angles.



The value of angle x is

- (A) 60°
- (B) 75°
- (C) 120°
- (D) 150°

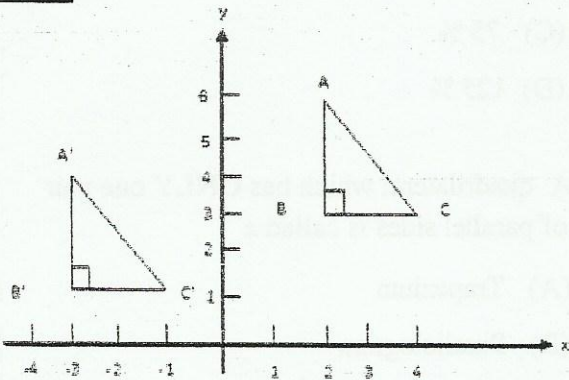
29. A map has a scale of 1 cm : 10 000 m. Kim ran a distance of 12 km along the road. What distance, in cm, would this represent on the map?

- (A) 0.12
- (B) 1.2
- (C) 12.0
- (D) 120

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30. A blender can be bought by either
 Plan A: Cash Price of \$500.00
 Plan B: Hire Purchase with \$100.00
 down payment and 12 monthly
 installments of \$50.00 each.
 The difference between the Cash Price and
 the Hire Purchase Price, in dollars, is
- (A) 100
 (B) 200
 (C) 500
 (D) 600

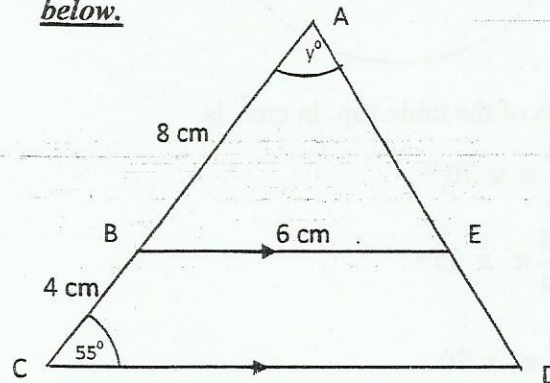
Questions 31 and 32 are based on the diagram below.



31. The above transformation which maps triangle ABC to its image A'B'C' may be best described as a
- (A) Reflection in the y-axis
 (B) Rotation of 90° anti-clockwise about the origin
 (C) Translation of 5 units to the right followed by 2 units vertically upwards
 (D) Translation of 5 units to the left followed by 2 units vertically downwards

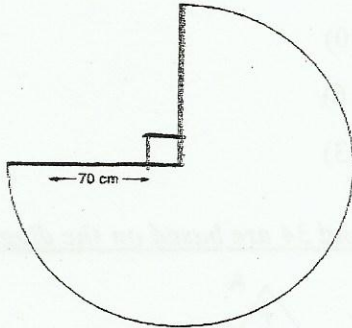
32. Triangle ABC is reflected in the x-axis. The coordinates of point A after the reflection will be
- (A) (2, -6)
 (B) (2, 0)
 (C) (-2, 6)
 (D) (2, 3)

Questions 33 and 34 are based on the diagram below.



33. Triangle ABE is an isosceles triangle. What is the value of angle y , in degrees?
- (A) 55
 (B) 60
 (C) 70
 (D) 110
34. Triangles ABE and ACD are similar. If $AB = 8\text{cm}$, $BC = 4\text{cm}$ and $BE = 6\text{cm}$, as shown, then the length, in cm, of CD is
- (A) 9
 (B) 10
 (C) 11
 (D) 12

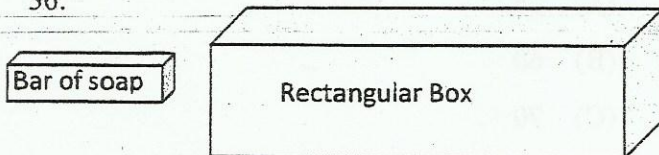
35. The diagram below represents a table top in the shape of a sector of a circle of radius 70 cm and a right angle at the centre as shown.



The area of the table top, in cm^2 , is

- (A) $\frac{3}{4}\pi \times 70^2$
 (B) $\frac{3}{4}\pi \times 35^2$
 (C) $\frac{3}{4}\pi \times 70$
 (D) $\frac{3}{4}\pi \times 35$

36.



Rectangular bars of soap of dimensions 9 cm x 5 cm x 4 cm are packed into the box shown with dimensions 50 cm x 36 cm x 16 cm. How many bars of soap can the box hold when filled?

- (A) 40
 (B) 160
 (C) 180
 (D) 360

37. A sum of money is shared between two students in the ratio 3:5 respectively. If the smaller share is \$480.00, what was the sum shared?

- (A) \$ 1280
 (B) \$ 1600
 (C) \$ 2400
 (D) \$ 3840

38. The fraction $\frac{3}{4}$ is equivalent to

- (A) 12.5 %
 (B) 25 %
 (C) 75 %
 (D) 125 %

39. A quadrilateral which has ONLY one pair of parallel sides is called a

- (A) Trapezium
 (B) Parallelogram
 (C) Rhombus
 (D) Rectangle

40. A bank loan of \$20 000 was taken out at Simple Interest. If it was repaid in 24 equal monthly installments of \$1000.00, calculate the rate per year at which Simple Interest was charged.

- (A) 10 %
 (B) 15 %
 (C) 20 %
 (D) 25 %

END OF TEST