Total

Name……

School……

Roll Number……

REPUBLIC OF SOMALILAND

ISLAMIC DA'WAH (AL-HUDA) EXAMINATION BOARD

AL-HUDA EDUCATION OFFICE

FORM FOUR

Mathematics

April 2019

Time 2 hours

Plus 10 minutes for reading through the paper

INSTRUCTIONS TO CANDIDATES

- This paper consists of 9 printed pages with the cover page
- Count them now. Inform the invigilator if there is any missing**.**

PART ONE: Multiple Choice Questions **60 Marks**

PART TWO: Structured Questions **40 Marks**

TOTAL = 100 Marks

- Answer **ALL** questions
- No Extra papers allowed.

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Use this page for rough work. It will <u>NOT</u> be marked.

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PART ONE: MULTIPLE CHOICE.

Choose the correct answer in each question. (60marks)

1- The length of a rope is 13 cm to the nearest cm, the lower bound is:

a) 12.5 cm b) 13.5 cm c) 12 cm d) 13 cm

2- The gradient of the tangent to the curve $y= 2x^2$ at the point (1,3) is:

a) 6 b) 2 c) 12 d) 4

3- 6 men take 10 days to complete a work, so takes 3 men to complete the same work in:

a) 1.8 days b) 5 days c) 20 days d) 2 days

4- Increasing 30 by the ratio 3:5 is equal to:

a) 70 b) 50 c) 150 d) 40

5- Decreasing 45 in the ratio 5:7 in two decimal place is:

a) 32.14 b) 63.32 c) 54.12 d) 32.15

6- Converting 180^o to radian is equal to:

a) 2πrad b) πrad c) π/2rad d) 4π/3rad

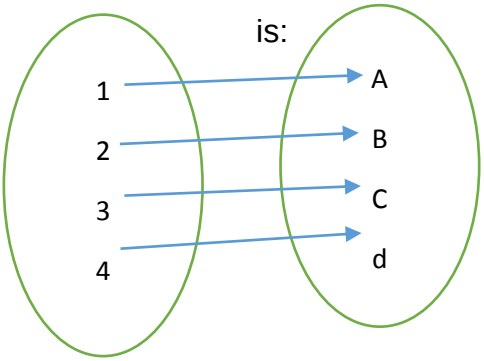
7- the domain of the relation R = { (2,3) , (2,4) , (3,7) , (5,2) } is;

A) (2,3,5) B) (2,2,3,5) C) (2,3,4,7) C) (3,4,7)

8- Lim x $\to 2$ $\frac{2x+4}{x+2}$ is equal to:

a) 4 b) 6 c) 2 d) 3

9- The function is:



a) Onto function b) many to one and one function

c) One-to-one function d) One–to-One correspondence

10- the mode of the data 1,2,1,3,2,4,2,5,6,2,4,2,8,3 is:

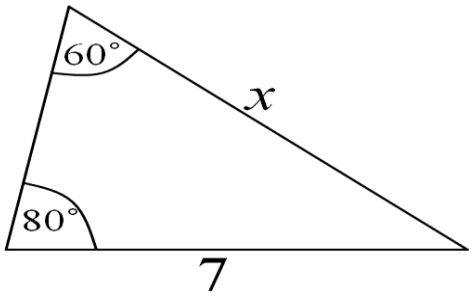
a) 1 b) 3 c) 4 d) 2

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11- An ordinary 6-sided die is rolled once. The probability of not getting 5 is:

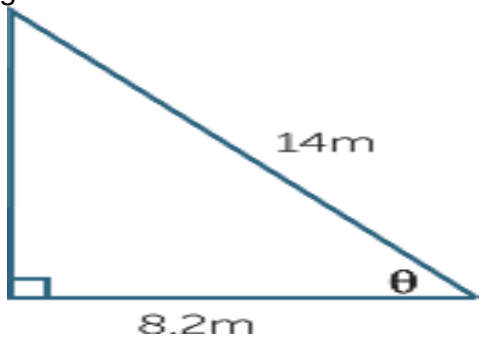
a) 1/6 b) 6 c) 5/6 d) 2/6

12- Using sine rule the value of x in two decimal place is:



a) 7.96 b) 8.23 c) 7.69 d) 8.32

13- The value of θ in the triangle below to nearest whole number is.



a) 54^o b) 45^o c) 60^o d) 34^o

14- The distance between the points (7,4) and (2,4) is: page169 f3

a) 7 b) 9 c) 5 d) -9

15- if A= { 2,3 } B= { 2,4 } A∪ B is equal to:

a) { 2,4 } b) { 3,4 } c) { 2,4,2 } d) { 2,3,4 }

16- Converting (2, $-2\sqrt{3}$) into polar coordinates is equal to:

a) (3, 1) b) $(-4, \frac{2\pi}{3})$ c) $(4, \frac{4\pi}{3})$ d) $(-4, 3\pi)$

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17- The integration of $\int 6dx$ is equal to:

a) $6x^2$ b) 6 c) 6x d) 12x

18- The derivative of $y = x^2 + 5$ is equal to:

a) 5 b) 2x+5 c) 2x d) 2

19- The result of (4+3i) + (5+6i) is:

a) (9+9i) b) (10+8i) c) (8+10i) d) (8+9i)

20- The inter-quartile range of the data 2,3,5,8,10,13,17 is:

a) 17 b) 8 c) 11 d) 10

PART TWO: STRUCTURED QUESTIONS (40 MARKS).

Answer all these questions

1- The ages of nine boys are 5,6,,8,6,4,9,10,7,9 from this data find:

a) Mean.

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b) Median.

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2- Two dice are rolled, find the probability that the sum is:

a) Equal to 4

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b) Less than 13

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3- Evaluate the following limits:

a) $\text{Find } \lim_{x \to 1} \frac{x^2 - 1}{x - 1}$

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b) Find $\lim_{x \to 0} \frac{\sqrt{x^2+9}-3}{x^2}$

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4- Differentiate the following terms:

a) f(x) = (x^2 – 5) (x^3 – 2x +3)

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b) f(x) = $\frac{x2+1}{5x-3}$

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5- Determine the area between the parabola $y= 3+2X-X^2$ and X-axis,

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6- Prove that : $\tan\theta \sin\theta + \cos\theta = \sec\theta$

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7- Fine the equation of the tangent to the curve $y = 3x^2$ at the point (1, 3). And Sketch the curve.

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8- Convert (−1, −1) into polar coordinates.

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9- Fine the equation of the circle whose center is (2, 3) and its radius is 5.

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10- Fine the coordinates of stationary point of the curve $y= x^3 -3x+2$

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