CLASS:_____ADM:____

NAME:_____

1. Evaluate $\dfrac{-4 \text{ of } (-4 + -15 \div 5) + (-3 - 4 \div 2)}{84 \div -7 + 3 - -5}$ (4mks

2. Solve for X given (3mks

$$(^1/_8)^X \times 64^2 = 256$$

3. The gradient of a line L through points A(2x, 4) and B (-1, x) is $^1/_7$. Find the equation of the perpendicular to L through B. (3mks

1

4. Solve the equality

$3 - 2x < x \le \dfrac{2x + 5}{3}$ and state the integrate values of x which satisfy the in equality. (3mks

5. Two similar Cans have different heights 8 cm and the other 10cm. If the surface area of the larger Can is 480cm^2. Find the surface area of the smaller Can. (3mks

6. Given that $\cos \theta = {}^{5}/_{13}$ and that $270^\circ \le \theta \le 360^\circ$, work out the value of $\tan \theta + \sin \theta$ without using tables or calculators. (3mks

2

7. The figure below is a velocity time graph of a car.
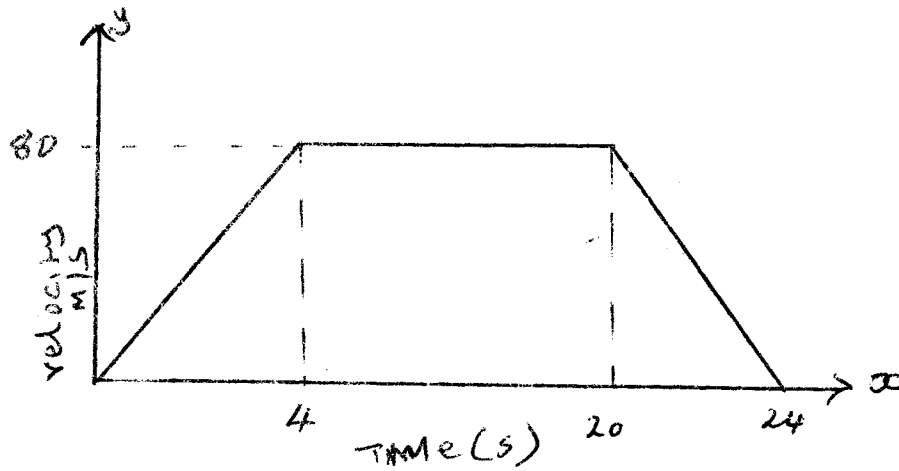
Find the total distance travelled by the Car. (3mks

b) Calculate the deceleration of the Car. (2mks

8. Simplify:

$$\frac{p^2 - 4m^2}{2m^2 - 7mp + 3p^2}$$ (4mks

3

9. During a certain ceremony, goats and chicken were slaughtered. The number of heads for both chicken and goats were 45. The total number of legs was 100. Determine the exact number of goats and chickens slaughtered. (4mks

10. The exterior angle of a regular polygon is an eighth of the interior angle. How many sides does the regular polygon have. (4mks

11. A man imported a vehicle at sh. 600,000 and sold it at sh. 1,000,000. Find his percentage profit if he spent 50,000 for clearing the vehicle at the port and further sh. 40,000 for shipping (4mks

12. The sides of a parallelogram are 4cm by 5cm and its area is 12cm². Calculate its angles.

4mks

13. From a points 20m away on a level ground, the angle of elevation to the lower window line is 27° and the angle of elevation to the top line is 32°. Calculate the height of the window.
(4mks

14. Simplify the expression.

(2mks

$$\frac{\sqrt{3}}{\sqrt{3} + \sqrt{2}}$$

SECTION B Answer all questions.

15. Using a pair of compasses and a ruler **only**.

a) Construct a triangle ABC such that AB = 8cm, BC = 6cm and angle ABC = 30°.   (3mks

b) Measure AC   (1mk

c) Draw a circle that touches the vertices A, B and C   (3mks

d) Measure the radius of the circle.   (1mk

e) Hence or otherwise calculate the area outside the triangle to 2 d.p.   (2mks

16. Two towns A and B are 80km apart. Juma started cycling from town A to town B at 10.00am at an average speed of 40km/h. Mutuku started from B towards at the same time as Juma and travelled by a Car at an average speed of 50 km/h.

a) Calculate

i) The distance from A when they met.   (5mks

b) The time of the day when they met.   (3mks

c) The distance travelled by Juma from A when Mutuku reached his destination. (2mks

17. Three Warships P, Q and K are at sea such that ship Q is 400km on a bearing of 030° from ship P. Ship R is 750km from ship Q and on a bearing of 120° from ship Q. An enemy ship S is sighted 1000 km due south of ship Q.

a) By taking a scale of 1cm to represent 100km, locate the positions of ship P, Q, R and S(4mks

b)Find the compass bearing of P from S.   (2mks

c) Determine the distance of S from P.   (2mks

d) Find the bearing of Q from R.   (2mks

8

18.   A two digit number is such that the sum of the ones and the tens digit is ten. If the digits are reversed the number formed exceeds the original by 54. Find the number.   (4mks

b)   The scale of a map is given by 1:20,000. Find the actual area in hectares of a region represented by a triangle of sides 6cm, 7cm and 4cm.   (4mks

c)   Factorize completely $X^2 - 9$ (2mks

19. The marks of 80 students were as follows.

MARK	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
FREQUENCY	1	6	15	15	15	5	14	5	3	1

a) Calculate the mean mark. (4mks

b) Estimate the medium mark (4mks

c) State the modal class (4mks