

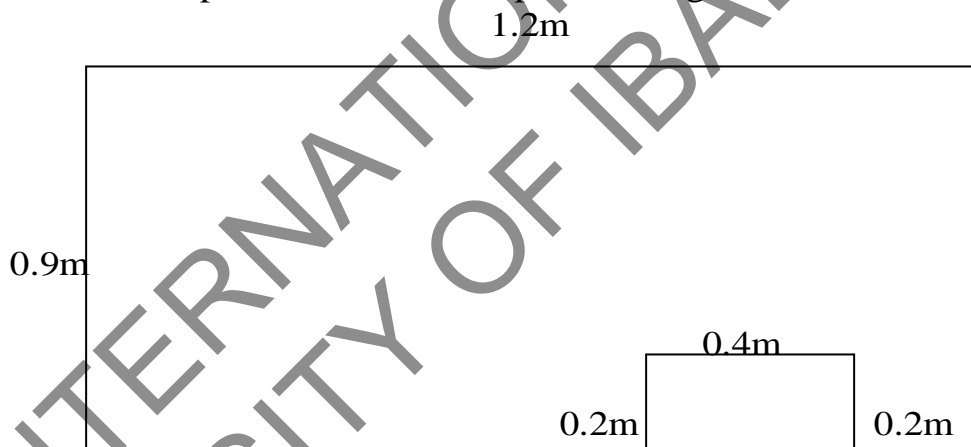
UNIVERSITY OF IBADAN
ENTRANCE EXAMINATION JS1- 2005
MATHEMATICS

TIME: 1 HR. 15 MINS

Do not open this paper until you are told to do so. While you are waiting, read the following instructions carefully.

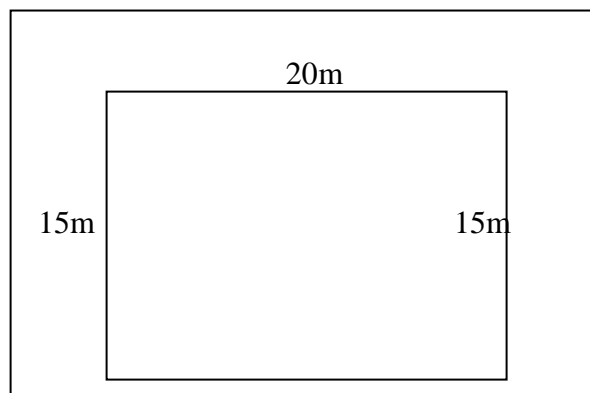
- a. Write your NUMBER and NAME in the space provided at the top of the answer sheet, putting your SURNAME first in capital letters.
- b. You must only use a pencil to SHADE the entire box. DO NOT TICK.
- c. Think carefully before choosing your answer to each question. When you have made your choice, look at the answer sheet for the number of the question, then find the letter of the answer you have chosen, and shade in your answer.
- d. If you want to change an answer you must erase it completely, then shade in the new answer.
- e. Work as fast as carefully as you can. When you have finished one page, go straight on to the next. The total number questions is 50
- f. Candidates should use only the answer sheet provided by the invigilator. No other answer sheet will, be, accepted. All rough work must be done on the question paper.
- g. Submit your answer sheet to your invigilator.

1. If $f = \frac{UV}{U + V}$ find f If $U = 20$ and $V = 30$
 (a) 9 (b) 12 (c) 18 (d) $42\frac{1}{5}$
2. Which of the following numbers is not a prime number?
 (a) 1 (b) 2 (c) 11 (d) 19
3. Find the shortest piece of wire that can be cut into equal lengths each of 27cm or 30cm or 45cm.
 (a) 102cm (b) 156cm (c) 240cm (d) 270cm
4. Arrange $\frac{1}{2}$ $\frac{1}{3}$ $\frac{5}{8}$ $\frac{5}{12}$ in descending order
 (a) $\frac{5}{8}$ $\frac{1}{2}$ $\frac{5}{12}$ $\frac{1}{3}$ (b) $\frac{1}{2}$ $\frac{1}{3}$ $\frac{5}{8}$ $\frac{5}{12}$ (c) $\frac{5}{8}$ $\frac{5}{12}$ $\frac{1}{2}$ $\frac{1}{3}$ (d) $\frac{1}{3}$ $\frac{5}{12}$ $\frac{1}{2}$ $\frac{5}{8}$
5. Three times a certain number is divided by 4 and 1 is subtracted from it. The result is 5. What is the number?
 (a) 6 (b) 9 (c) 17 (d) 8
6. Find the height of a triangle whose area is 27m^2 and whose base is 15m.
 (a) 3.6m (b) 4.2m (c) 6.9m (d) 1.8m
7. What is the perimeter of the shape in the figure below?



- (a) 5.8m (b) 5.2m (c) 4.6m (d) 3.4m
8. Shehu took ten tests in a term and scored 4,4,5,4,5,3,6,7,8,4, out of a maximum of ten marks. Find the mean mark scored by Shehu.
 (a) 10 (b) 4.5 (c) 5 (d) 6.1
9. A manufacturer pays £2800 for 35 machines, how much will 60 machines cost?
 (a) £3200 (b) £4800 (c) £5120 (d) £6000
10. A tailor allows his customer 5 per cent cash discount. What will the customer pay for a suit priced at N7860.
 (a) N393 (b) N5986 (c) N7467 (d) N6540

11. Find the rate of simple Interest earned when a principal of £750 earns interest of £210 in 4 years.
 (a) 7% (b) 4% (c) 8.2% (d) 9%
12. An airplane flies a distance 1800 kilometers in $2\frac{1}{2}$ hours. What is its speed in kilometers per hour.
 (a) 900km/h (b) 1000km/h (c) 720km/h (d) 54km/h
13. A motorist travels 250 kilometers at 60km/h and then a further 150 kilometers at 80km/h. How long did the whole journey take?
 (a) $6\frac{1}{24}$ hours (b) $9\frac{1}{2}$ hours (c) $8\frac{3}{5}$ hours (d) $11\frac{3}{19}$ hours
14. Find $17\frac{1}{2}\%$ of N480.80
 (a) N72.09 (b) N80.63 (c) N84.14 (d) N102.18
15. The square root of 190969 is
 (a) 436 (b) 437 (c) 138 (d) 137
16. A man started traveling at 10.30am. At 12 noon he had travelled 45km. How far should he have gone at 1.42pm?
 (a) 56km (b) 78km (c) 89.5km (d) 96km
17. Two books cost N500 each, and four other books cost N800 each. Find the average cost of the books.
 (a) N520 (b) N700 (c) N958 (d) N650
18. Find the cube root of $2^6 \times 3^9 \times 5^9$
 (a) $2 \times 3 \times 5$ (b) $2^2 \times 3^3 \times 5$ (c) $2^3 \times 3^3 \times 5^3$ (d) $2^{1/3} \times 3^{1/3} \times 5^{1/3}$
19. Find the square root of $5^{19/25}$
 (a) $2^{4/5}$ (b) $2^{7/15}$ (c) $2^{1/2}$ (d) $2^{2/5}$
20. Simplify $\frac{2}{5} \times \frac{3}{4} - \frac{3}{16} + \frac{1}{4}$
 (a) $\frac{3}{20}$ (b) $\frac{1}{5}$ (c) $1\frac{5}{12}$ (d) $3\frac{1}{6}$
21. A certain journey takes 6 hours' at an average speed of 50km/h. How long will it take at an average of 45km/h
 (a) $6\frac{1}{4}$ hours (b) $5\frac{7}{8}$ hours (c) $6\frac{2}{3}$ hours (d) $8\frac{1}{11}$ hours
22. Find the area of a 3m path round a rectangular lawn 20 metres by 15 metres.



- (a) 9m^2 (b) 158m^2 (c) 246m^2 (d) 546m^2
23. 54% of a population of a town are males. Find the total population If there are 6,670 females.'
- (a) 8,950 (b) 12,701 (c) 14,500 (d) 13,890
24. A motorist is travelling at the rate of 56km/h, find his speed in metres per second.
- (a) 18m/s (b) 15.6m/s (c) 56m/s (d) 13.3m/s
25. What number does MDCLXXVIII represent?
- (a) 1073 (b) 1076 (c) 1678 (d) 2678
26. Find the difference between the LCM of 12, 18 and 21 and HCF of 25 and 4

- (a) 18 (b) 24 (c) 247 (d) 252
27. If $\frac{4}{5} = \frac{x}{25}$, what number does x represent?
- (a) 20 (b) 16 (c) 50 (d) 4
28. A boy spent $\frac{1}{3}$ of his money and then $\frac{1}{4}$ of the remainder. He had 24 kobo left. He started with

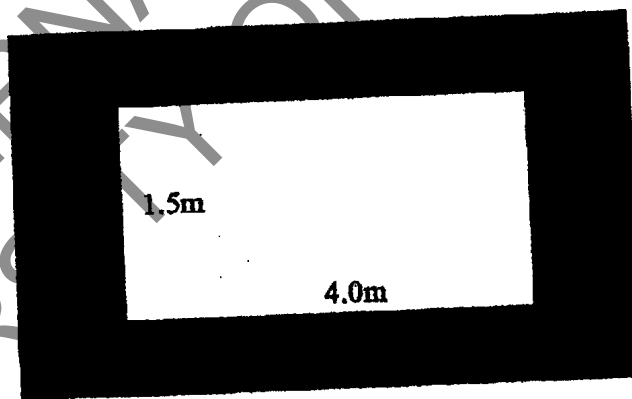
- (a) 14 kobo (b) 24 kobo
(c) 38 kobo (d) 48 kobo
+ b + ab: What is

29. If $a*b = a$
the value of $8*5$

- (a) 13
(e) 40

30. The
square is 24cm .

- (a) 48cm^2
 36cm^2 (c)
 14cm^2



- (b) 18
(d) 53
perimeter of a
The, area is
(b)
 24cm^2 (d)

31. Given that $83 \times 27 = 2241$, find the value of 830×0.27
- (a) 0.2241 (b) 2.241 (c) 22.41 (d) 224.1
32. If $P = 7$, $Q = 12$ and $R = 15$. What is $(2P + \frac{1}{2}Q) + \frac{1}{3}R$?
- (a) 25 (b) $\frac{20}{3}$ (c) 4 (d) $\frac{20}{15}$
33. Find half the area of the shaded portion of the figure

2.5m

- (a) 9m^2 (b) 7.25m^2 (c) 4.5m^2 (d) 2m^2 6m
34. An equilateral triangle and a square have their perimeter equal. If the side of the equilateral triangle is 12cm, what is the area of the square?
(a) 16cm^2 (b) 18cm^2 (c) 36cm^2 (d) 8cm^2
35. The area of one face of a cube is 16cm^2 . What is the volume of the cube?
(a) 64cm^3 (b) 12cm^3 (c) 8cm^3 (d) 4cm^3
36. Eight books each having the same weight, weigh 28.8kg. What is the weight of 22 of these books?
(a) 79.2kg (b) 97.2kg (c) 1.08kg (d) 190.36kg
37. 72 litres of water fill $\frac{3}{8}$ of a tank. How much more water is needed to fill the tank?
(a) 192 litres (b) 120 litres (c) 72 litres (d) 24 litres
38. How many degrees are there in 3 right angles?
(a) 900 (b) 180° (c) 270° (d) 1080°
39. Simplify $0.02 \times 0.01 + 0.4$
(a) 5 (b) 0.05 (c) 0.005 (d) 0.0005
40. Mrs. Inanga left Yaba railway terminus in Lagos for Sokoto at 4.30pm attend a crucial meeting. The journey took her 12 hours. At what did she arrive at Sokoto the next day?
(a) 2.30am (b) 3.30pm (c) 4.30am (d) 4.30pm
41. The average of 4 numbers is 19, the average of 3 of them is 21, what is the fourth number?
(a) 76 (b) 68 (c) 21 (d) 13
42. Given that $\frac{25}{m} = \frac{5}{6}$, find the value of m
(a) 10 (b) 20 (c) 25 (d) 30
43. Find the average of all prime numbers from 5 to 20.
(a) 7.2 (b) 8 (c) 10 (d) 12
44. What is the angle between the hour hand and the minute hand of a clock at 2 o'clock?
(a) 120 (b) 30° (c) 36° (d) 60°
45. Maria is x years old. In two years time she will be 16, years old. What is x
(a) 18 (b) 8 (c) 7 (d) 14
46. If each class period is $\frac{2}{3}$ of an hour long. How many periods are there

- in $4\frac{2}{3}$ h
- (a) 5 (b) 7 (c) 8 (d) $4\frac{1}{2}$
47. What is the place value of 8 in 729.468
- (a) thousand (b) unit (c) thousandths (d) unith
48. If $m = \frac{1}{4}$, $n = 1\frac{1}{2}$. Find the value of $\frac{1}{m^2} - \frac{1}{n^2}$
- (a) $\frac{22}{3}$ (b) $15\frac{5}{9}$ (c) $11\frac{1}{3}$ (d) $\frac{22}{9}$
49. If Ole's birthday falls on the 14th of September, when is Musa's birthday If he is twenty days older than Ole?
- (a) 34th of September (b) 4th of October (c) 3rd of October (d) 25th of August
50. A fruit grower uses $\frac{1}{3}$ of his land for bananas, $\frac{3}{8}$ for pineapples, $\frac{1}{6}$ for mangoes and the remainder for oranges. What fraction of his land is used for oranges?
- (a) $\frac{1}{8}$ (b) $\frac{7}{8}$ (c) $\frac{7}{24}$ (d) $\frac{3}{8}$