**JS3**

PAPER 1

1. Simplify 4(a+1) + 5(a+2). (a) 5a+10 (b) 9 + 14a (c) 9a-14 (d) 9a+14 (e) 10a+14
2. Factorise 16y2 + 28$xy.$ (a) 4y+7$xy$ (b) 8y2+14$xy$ (c) 4y(4y+7$x$ (d) 2y(4y+8$x$ (e) 4y(2y+7$x$
3. Solve the equation $\frac{12}{3x+1}$ = $\frac{3}{x}$ (a) 6 (b) 5 (c) 4 (d) 3 (e) 1
4. Find the value of n if $\frac{4n}{7}$ + $\frac{n}{3}$ = 5 + $\frac{3}{7}$ (a) 14 (b) 12 (c) 10 (d) 7 (e) 6
5. Which of the following inequalities is true? (a) -2 < -4 (b) -15>7 (c) 2<-5 (d) 14-6>8 (e) 12>5
6. Solve the inequality 3(2R-3) < 33. (a) R< 6 (b) R< 7 (c) R = 7 (d) R > 6 (e) R > 7
7. Solve $\frac{x}{3}$ + 4 < 13 (a) $x$ < 5 (b) $x $< 9 (c) $x$ < 27 (d) $x$ < 29 (e) $x$ < 51
8. If the sum of square of 6 and the square root of 81 is divided by 5, the result is (a) 13 (b) 11 (c) 9 (d) 5 (e) 3
9. Solve the inequality 2$x$+3 > 11. (a) $x $> 2 (b) $x$ > 3 (c) $x$ > 4 (d) $x$ > 8 (e) $x$ > 11
10. Find the LCM of 9$x$ and 4$ x$2y. (a) 4$ x$2y (b) 9$x$2y (c) 18$x$2y (d) 36$x$2y (e) 45$x$2y
11. If 7 is added to a certain number, and the result is 42. What is the number? (a) 42 (b) 35 (c) 21 (d) 12 (e) 6
12. Find the value of $x$, if $x$-1 = 2-$x$ (a) 2$\frac{1}{2}$ (b) 2 (c) 1 $\frac{1}{2}$ (d) 1 (e) 10
13. The product of a certain number and 3 is equal to twice the number subtracted from 60. Find the number. (a) 14 (b) 13 (c) 12 (d) 11 (e) 10
14. Solve the equation $\frac{x}{3}$ +$x$ = 1 (a) 4 (b) 3 (c) 1$\frac{1}{3}$ (d) 1 (e) $\frac{3}{4}$
15. When the sum of 40 and a certain number is divided by 9, the result is 8. Find the number. (a) 40 (b) 38 (c) 25 (d) 32 (e) 15
16. Factorise 3$x$(2$x$-1) + 1(2$x$-1) (a) (2$x$-1)2 (b) 3$x$+1)2 (c) 3$x$(2$x$-1)2 (d) (2$x$-1)( 3$x$+1) (e) (2$x$+1)( 3$x$-1)
17. A particular network service provider charges 50k per second to make a call. How many minutes will a caller with N300.00 airtime last? (a) 11 (b) 10 (c) 6 (d) 5 (e) 3
18. If 90 is divided by the sum of 4 and a certain number, the result is 10. Find the number. (a) 11 (b) 10 (c) 9 (d) 7 (e) 5
19. Solve the equation $\frac{2(m+2)}{2}$ + $\frac{2m-2}{3}$ (a) 8 (b) 6 (c) -6 (d) -8 (e) -10
20. Solve the equation $\frac{3}{4}$ – $x$ = $\frac{-2}{3}$ (a) 1$\frac{1}{6}$ (b) 1$\frac{5}{12}$ (c) 1$\frac{5}{6}$ (d) 1$\frac{7}{12}$ (e) 2$\frac{5}{12}$
21. Simplify a2b-ab2 (a) $\frac{2a}{c}$ (b) $\frac{2b}{c}$ (c) $\frac{ab}{c}$ (d) $\frac{a-b}{c}$ (e) $\frac{b-a}{c}$

abc

1. The graph below represents which of the following inequalities?

0

10

5

(a) $x$>5 (b) $x\geq $5 (c) $x$<5 (d) $x$≤5 (e) $x$<-5

1. Evaluate Q = 2$x$-3y when $x$=10 and y =5. (a) 2 (b) 3 (c) 5 (d) 10 (e) 15
2. Given that V=$\frac{4}{3}πr^{3}$, make r the subject of the formula. (a) 3 $ \frac{3V}{4π}$ (b) $\frac{3V}{4π}$ (c) $ \frac{ 3V}{4π} $ (d)

3 $ \frac{π}{4}$ (e) 3 $ \frac{π}{2}$

1. Evaluate$\frac{a-b}{c}$, given that a = 15, b = 5 and c = 2. (a) 2 (b) 5 (c) 10 (d) 15 (e) 20
2. Solve 5a-2b = 7 and 5a + 2b = 14 (a) a = $\frac{10}{21},$ b = $\frac{4}{7}$ (b) a = $\frac{4}{7}$, b = $\frac{10}{21}$ (c) a = $\frac{7}{4}$, b = $\frac{10}{21}$ (d) a = 2 $\frac{1}{10}$, b = 1$\frac{3}{4}$ (e) a = 21, b = 7
3. Solve the equation $\frac{3-x}{x+4}$ = $\frac{2}{3}$ (a) $\frac{1}{5}$ (b) $\frac{1}{3}$ (c) 3 (d) 5 (e) 7
4. Solve the simultaneous equations: a + 2b = 5, 3a + b = 5 (a) a = 2, b = 2 (b) a = 2, b = 1 (c) a = 1, b = 2 (d) a = 1, b = 1 (e) a = -2, b = 1
5. Make h the subject of the formula V = $πr^{2}$h. (a) h = $πr^{2}$ (b) h = $πr^{2}v$ (c) h = $\frac{v}{πr^{2}}$ (d) h = $\frac{πr^{2}}{v}$ (e) h = $\frac{v}{πr^{}}$
6. Expand (2$x$ – 3)($ x$-5). (a) 2$x^{2}$-7$x$-15 (b) 2$x^{2}$\_7$x$+15 (c) 2$x^{2}$+13$x$-15 (d) 2$x^{2}-$13$x$+15 (e) 2$x^{2}-$13$x$-15
7. Factorise 9a-27 completely. (a) 9(a-3) (b) 3(3a-1) (c) 9(a-27) (d) 9(3a-7) (e) 3a(3-a)
8. When 4 is divided by the sum of a certain number and 10, the result is the same as dividing 3 by the sum of that number and 4. Find the number. (a) 5 (b) 7 (c) 9 (c) 9 (d) 11 (e) 14
9. The difference between the ages (in years) of a father and that of his son is 28. If the father and age is 42, how ma old is the son? (a) 28 (b) 18 (c) 16 (d) 14 (e) 10
10. Find the value of x +2x+3x+30=150 (a) 15 (b) 20 (c) 30 (d) 45 (e) 60
11. What is the coefficient of $x$ in 4$x^{2}$+8$x$ -$x^{2}$-3$x^{}$ (a) 8 (b) 5 (c) 4 (d) 3 (e) -3
12. Which of the following number lines represents the solution to 5$x$-4>4$x$+3?

Use the information below to answer questions 37 to 39

The sum of 8 times a number and 5 times another number is 184. The first number minus the second number is -3

1. What are the numbers? (a) 20 and 25 (b) 21 and 7 (c) 13 and 16 (d) 10 and 11 (e) 5 and 7
2. Find the product of the two numbers. (a) 560 (b) 318 (c) 208 (d) 108 (e) 78
3. What is the sum of the numbers? (a) 29 (b) 29 (c) 19 (d) 17 (e) 16

Use the graph below to answer questions 40 to 42.

1. What is the coordinate of point P?

(a) (0,3) (b) (3,0) (c) (1,3) (d) (3,1) (e) (3,2)

1. Add coordinates of points P and R. (a) (3,0)

(b) (2,3) (c) (1,3) (d) (0,3) (e) (-1,2)

1. Find the coordinate of point Q. (a) (0,2)

(b) (0,-2) (c) (2,-1) (d) (-1,2) (e) (-2,2)

1. The probability that Ada passes her Mathematics Examination is $\frac{1}{6}.$ what is probability that she fails the examination? (a) $\frac{1}{6}$ (b) $\frac{1}{4}$ (c) $\frac{1}{3}$ (d) $\frac{2}{3}$ (e) $\frac{5}{6}$
2. A bag contains 2 red and 3 white balls. If a ball is picked at random from the bag, what is the probability it is red? (a) $\frac{1}{6}$ (b) $\frac{1}{3}$ (c) $\frac{2}{5}$ (d) $\frac{1}{2}$ (e) $\frac{2}{3}$
3. What is the range of the following set of numbers: 20,30,10,25,24,40,50,70,80,90,15,

32? (a) 90 (b) 80 (c) 60 (d) 40 (e) 20

1. The ages of six men (in years) in a particular village are 72,84,88,74,73 and 83. What is the average age? (a) 85 (b) 84 (c) 79 (d) 81 (e) 78
2. If the mean of 2,6,x,8,3 and 7 is 5, what is the value of x? (a) 8 (b) 7 (c) 5 (d) 4 (e) 2
3. Find the mean of the following set of numbers: 12,14,18,16. (a) 15 (b) 14 (c) 13 (d) 12 (e) 11
4. Find the median of the following set of numbers: 4,3,1,5,6,4.
5. Find the mode of the following set of numbers: 3.2, 3.1, 3.3, 3.1, 3.2, 3.4, 3.3, 3.1. (a) 6.3 (b) 3.4 (c) 3.3 (d) 3.2 (e) 3.1
6. Find the sum of the median and mode of the following set of numbers: 15, 13, 12, 16, 15, 17, 18, 19, 14, 17, 17. (a) 53 (b) 43 (c) 33 (d) 23 (e) 13

The marks scored by students in a Mathematics test are shown below: 8, 10,8,9,7,6,6,0,5,4,2,1,5,6,7. Use the information to answer questions 52 and 53

1. How many students sat for the test? (a) 17 (b) 16 (c) 15 (d) 14 (e) 13
2. If the pass mark was 6, how many students failed the test? (a) 10 (b) 9 (c) 8 (d) 7 (e) 6

The table below is a frequency distribution of scores of students in a test.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Scores | 40 | 55 | 62 | 70 | 80 |
| Frequency | 2 | 4 | 5 | 2 | 1 |

Use the information to answer questions 54 and 55

1. What fraction of the students scored 55? (a) $\frac{1}{7}$ (b) $\frac{2}{7}$ (c) $\frac{3}{7}$ (d) $\frac{4}{7}$ (e) $\frac{5}{7}$
2. How many students scored at most 55? (a) 8 (b) 7 (c) 6 (d) 5 (e) 4

Use the information to answer questions 56 to 58.



1. How many students obtained at least 6 marks? (a) 38 (b) 35 (c) 33 (d) 30 (e) 24
2. What is the most common mark? (a) 9 (b) 58 (c) 55 (d) 53 (e) 45

The pie chart below represents the portions of a farmland used for planting groundnuts, yam, beans, and vegetables

59. What percentage of the farmland is used for yam?

 (a) 10% (b) 15% (c) 20% (d) 25% (e) 30%

60. What is the ratio of the farmland used for beans to that of vegetables? (a) 17:60 (b) 37:50 (c) 25:41 (d) 44:37 (e) 50:41



**THEORY**

*Instruction: Answer all*

1. (a) Solve 4$x$ + y = 13 …………………………. (i) (ii) 5$x$ – 3y = 12 ……………

(b) By how much is 17$x$ less than 60?

(c) From the sum of$ \frac{ 5}{6}$, $\frac{3}{4}$ and $\frac{2}{3}$ subtract 1$\frac{1}{2}$

1. (a) Simplify $\frac{2}{5x-7}$ = $\frac{4}{4x+1}$

(b) Convert 1101.011two to base ten.

(c) If y = 7-3$x$. Calculate the values of y when $x$= -1, 0, 1, 2, 3