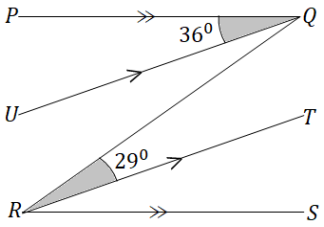
1. Evaluate $(8^{1/3} \times 5^{2/3})/10^{2/3}$
   A. 2/5
   B. 5/3
   C. $\sqrt[3]{5}$
   D. $\sqrt[3]{2}$

2. Correct 241.34 $(3 \times 10^{-3})^2$ to 4 significant figures.
   A. 0.0014
   B. 0.001448
   C. 0.0022
   D. 0.002172

3. Two angles of a pentagon are in the ratio $2:3$. The others are 60^0 each. Calculate the smaller of the two angles.
   A. 72^0
   B. 100^0
   C. 120^0
   D. 144^0

4. In the diagram, $\angle PQU = 36^0$, $\angle QRT = 29^0$, $PQ // RS$ and $UQ // RT$. Find $\angle PQR$.

   A. 94^0
   B. 65^0
   C. 61^0
   D. 54^0



5. The sum of 11011_2, 11111_2 and 10000_2 is $10m10n0_2$. Find the values of m and n.
   A. $m = 0, n = 0$
   B. $m = 1, n = 0$
   C. $m = 0, n = 1$
   D. $m = 1, n = 1$

6. There are 250 boys and 150 girls in a school, if 60% of the boys and 40% of the girls play football, what percentage of the school play football?
   A. 40.0%
   B. 42.2%
   C. 50.0%
   D. 52.5%

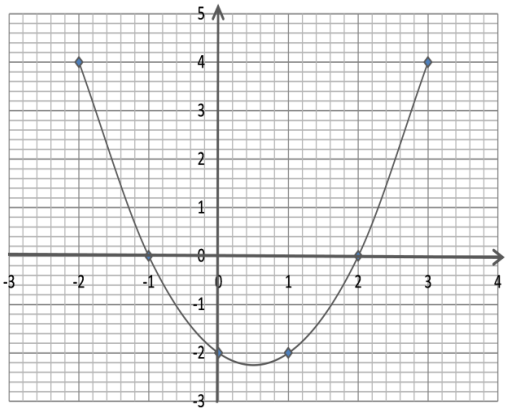
7. Find the coefficient of m in the expansion of $\left(\frac{m}{2} - 1\frac{1}{2}\right)\left(m + \frac{2}{3}\right)$
   A. $-\frac{1}{6}$
   B. $-\frac{1}{2}$
   C. -1
   D. $-1\frac{1}{6}$

8. Simplify: $\frac{x^2 - y^2}{(x+y)^2} \div \frac{(x-y)^2}{(3x+3y)}$
   A. $\frac{x-y}{3}$
   B. x + y
   C. $\frac{3}{x-y}$
   D. x – y

9. The sum of 12 and One-third of n is 1 more than twice n. Express the statement in the form of an equation.
   A. $12n - 6 = 0$
   B. $3n - 12 = 0$
   C. $2n - 35 = 0$
   D. $5n - 33 = 0$

10. Make x the subject of the relation $d = \sqrt{\frac{6}{x} - \frac{y}{2}}$
    A. $x = \frac{6}{d^2} + \frac{12}{y}$
    B. $x = \frac{12}{2d^2 - y}$
    C. $x = \frac{12}{y} - 2d^2$
    D. $x = \frac{12}{2d^2 + y}$

Use the graph above to answer questions **11** and **12**



11. The graph is that of the quadratic expression.
    A. $y = x^2 + x - 2$
    B. $y = x^2 - x + 2$
    C. $y = x^2 - x - 2$
    D. $y = x^2 + 2x + 2$

12. The values of x when y = -1 are approximately.
    A. -1.0 and 2.0
    B. -1.3 and 2.3

C. -0.6 and 2.6
D. -0.6 and 1.6

13. The lengths of the adjacent sides of a right-angled triangle are x cm, (x – 1) cm. If the length of the hypotenuse is $\sqrt{13}$ cm, find the value of x.
A. 2
B. 3
C. 4
D. 5

14. If $tan\, x = 1$, evaluate $sin\, x + cos\, x$, leaving your answer in surd form.
A. $2\sqrt{2}$
B. $\frac{1}{2}\sqrt{2}$
C. $\sqrt{2}$
D. 2

15. A right circular cone is such that its radius r is twice its height h. Find its volume in terms of π.
A. $\frac{2}{3}$ π h^2
B. $\frac{1}{12}$ π h^2
C. $\frac{4}{3}$ π h^2
D. $\frac{4}{3}$ π h^2

16. Calculate the total surface area of a cupboard which measures 12 cm by 10 cm by 8 cm.
A. 1920cm^2
B. 592cm^2
C. 296cm^2
D. 148 cm^2

A box contains 5 red, 3 green and 4 blue balls. A boy is allowed to take away two balls from the box. Use this information to answer questions 17 and 18.

17. What is the probability that the two balls are red?
A. $\frac{5}{33}$
B. $\frac{9}{33}$
C. $\frac{103}{132}$
D. $\frac{31}{36}$

18. What is the probability that one is green and the other is blue?
A. $\frac{2}{11}$
B. $\frac{5}{12}$
C. $\frac{8}{12}$
D. $\frac{7}{11}$

The table below gives the marks scored by a group of students in a test

Mark	0	1	2	3	4	5
Frequency	I	2	7	5	4	3

Use the table to answer Questions 19 and 20

19. What is the median marks?
A. 1
B. 2
C. 3
D. 4

20. What is the probability of selecting a student from the group that scored 2 or 3?
A. 1/11
B. $^5/_{25}$
C. $^7/_{22}$
D. 6/11

Answer keys

1. D
2. D
3. D
4. B
5. D
6. D
7. D
8. C
9. D
10. D
11. C
12. D
13. B
14. C
15. D
16. B
17. A
18. A
19. C
20. D