



SCHOLARSHIP EXAMINATION

MATHEMATICS

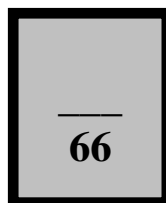
2016

Time: 1 hour

Name:

School:

Non Calculator



1. Using the information that

$$82 \times 13.4 = 1098.8$$

write down the value of

(a) 820×134

.....
(1)

(b) 8.2×1.34

.....
(1)

(Total for Question 1 is 2 marks)

2. Find the answers to these. Give the answer as a mixed number or as a fraction in its simplest form.

a) $\frac{2}{7} + \frac{3}{5}$

(2)

b) $\frac{3}{5} \times \frac{2}{11}$

(2)

c) $2\frac{1}{4} + 5\frac{7}{9}$

(3)

(Total for Question 2 is 7 marks)

3. Work out an estimate for the value of $\frac{29 \times 5.42}{0.24}$

.....
(3)

(Total for Question 3 is 3 marks)

4. Write 275 as a product of its prime factors.

.....
(Total for Question 4 is 2 marks)

5. Solve the following equations.

a) $2x - 1 = 16$

(2)

b) $3(x - 1) + 2(x + 5) = 15$

(4)

c) $\frac{x}{2} + \frac{x+2}{3} = 11$

(3)

d) I am currently three times the age I was 10 years ago. By forming an equation or otherwise, find out how old I am at the moment.

(2)

(Total for Question 5 is 11 marks)

6.

- a) Find the mean (average) of this set of numbers.
2, 8, 1, 9, 5, 3, 2, 7
Give your answer as an exact decimal.

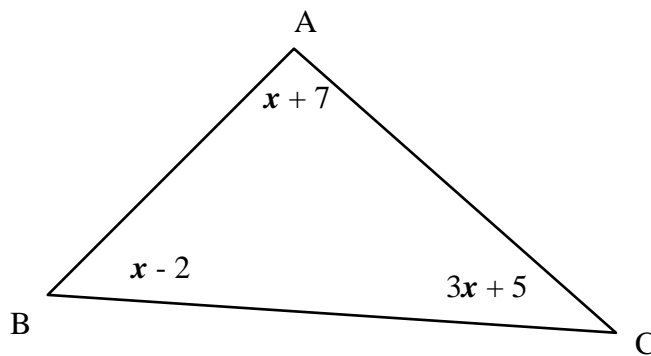
(3)

- b) The school hockey team have scored an average of 2.7 goals in their ten matches so far this season. How many goals do they need to score in their next match if they are to increase their average per match to 3 goals ?

(3)

(Total for Question 6 is 6 marks)

7. By considering the triangle below, find the value of x .



(3)

.....
(Total for Question 7 is 3 marks)

8. What is the angle between the hands of a clock at 9.30 ?

.....
(Total for Question 8 is 3 marks)

9. Expand and simplify $2(x - y) - 3(x - 2y)$

.....
(3)
(Total for Question 9 is 3 marks)

10. Solve the simultaneous equations

$$7x + 2y = -1$$

$$4x - 3y = 16$$

$x = \dots\dots\dots, y = \dots\dots\dots$

(Total for Question 10 is 4 marks)

11. Two cubical dice each have faces numbered 0, 1, 2, 3, 4, 5. When both dice are thrown what is the probability that the total score is a prime number ?

(Total for Question 11 is 4 marks)

12. $y = 3x^2 - ab$

$$b = -3$$

$$a = 4$$

$$x = 2$$

(a) Work out the value of y .

.....
(3)

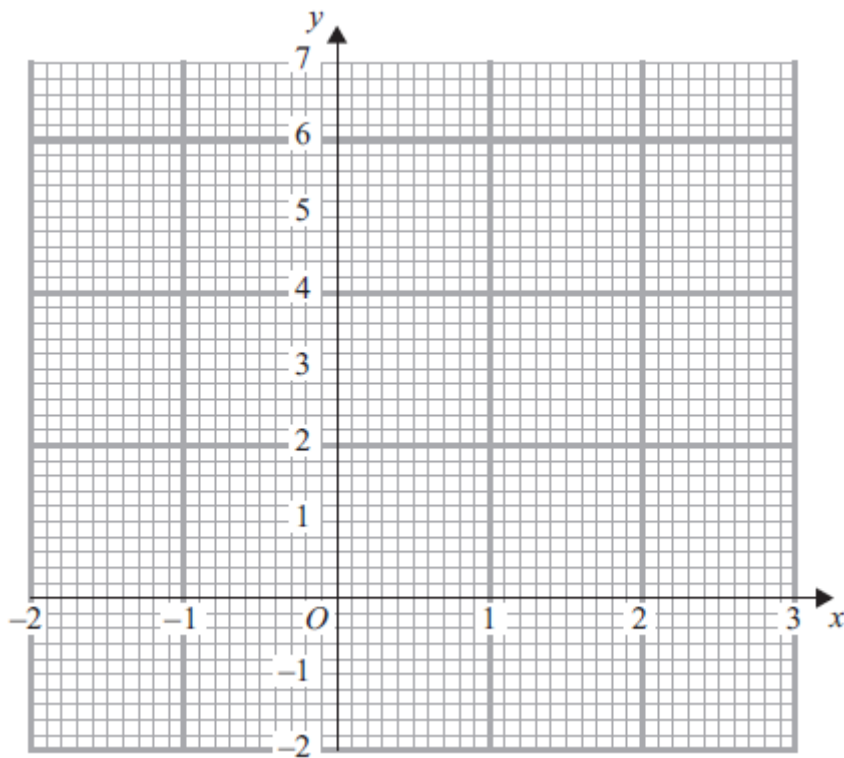
(Total for Question 12 is 3 marks)

13. (a) Complete the table of values for $3x + 2y = 7$

x	-2	-1	0	1	2	3
y		5	3.5			-1

(2)

(b) On the grid, draw the graph of $3x + 2y = 7$



(2)

(Total for Question 13 is 4 marks)

14. $-3 \leq n < 4$
 n is an integer.

(a) Write down all the possible values of n .

.....
(2)

(b) Solve the inequality $5x - 2 > 13$

.....
(2)

(Total for Question 14 is 4 marks)

15. (a) Simplify $m^4 \times m^5$

.....
(1)

(b) Simplify $\frac{p^9}{p^5}$

.....
(1)

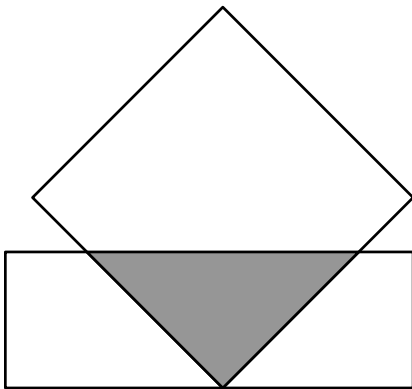
(Total for Question 15 is 2 marks)

16. The bearing of point B from point A is 070° . What is the bearing of A from B?

.....
(2)

(Total for Question 16 is 2 marks)

17. The diagram shows a 2×2 square and a 3×1 rectangle. One vertex of the square lies on a side of the rectangle. The sides of the rectangle are parallel to the diagonals of the square. What is the area of the shaded triangle?



.....
(3)

(Total for Question 17 is 3 marks)

END OF PAPER