SEVENOAKS SCHOOL

YEAR 7 (11+) ENTRANCE EXAMINATION
January 2018
for entry in September 2018

MATHEMATICS

Name: _____

School: _____.

Time allowed: 1 hour

Equipment needed: Pen, pencil, eraser, ruler.

Information for candidates:

1. Calculators are NOT allowed.
2. Write your name and school on this sheet.
3. Write your answers on the question paper in the space provided.
4. There are 20 questions in this paper, try to answer all of them, but don't worry if you don't complete the paper. If you get stuck, just go on to the next question and if you have time at the end come back to the one(s) you left.
5. There are 60 marks in total available for this paper. Marks for each question are shown in square brackets [ ] after the question.
6. Show all your working. You may be awarded marks for correct working even if your final answer is incorrect, and a correct answer unsupported by correct working may not receive full marks.

1. Sophie is putting sweets in party bags for her friends. She has:

   80 fizzy cola bottles

   78 milk bottles

   68 fried eggs

   56 jelly rings

   44 flying saucers

   12 strawberry boot laces

   a) How many sweets does Sophie have in total?

   _____ [1 mark]

   b) She shares the sweets equally amongst 13 bags. How many sweets are in each bag?

   _____ [1 mark]

2. A concert hall has 128 rows of 35 seats.

   a) How many seats are there in the concert hall?

   _____ [1 mark]

   b) If the concert hall is 75% full, how many seats are **empty**?

   _____ [1 mark]

3. Calculate:

a) $-3 \times 2 - 9$

_____ [1 mark]

b) 4^3

_____ [1 mark]

c) $2 + -4 \times -3$

_____ [1 mark]

d) $(5 - 11) \div 3$

_____ [1 mark]

4. Nicola has four number cards:

1	**2**	**8**	**9**

She arranges them to form two 2 digit numbers. She multiplies the numbers together. Calculate the largest possible answer.

_____ [2 marks]

5. Round 325.48 to the following degrees of accuracy:

a) Nearest 100

_____ [1 mark]

b) Nearest 10

_____ [1 mark]

c) Nearest whole number

_____ [1 mark]

d) One decimal place

_____ [1 mark]

6. Place the following numbers in **ascending** order:

1.02	1.2	1.15	1.008	1.9

[2 marks]

7. The sum of three different primes is 16. What are the three numbers?

_____ [2 marks]

8. Blackcurrant cordial is diluted in the ratio 1 part cordial to 4 parts water.

   a) How much water should be mixed with 30ml of cordial?

   _____ [1 mark]

   b) How much cordial should be used to make 750ml of the drink?

   _____ [1 mark]

9. Add or subtract these fractions. Give your answers in their simplest terms.

   a) $\frac{3}{5} + \frac{2}{10}$

   _____ [2 marks]

   b) $\frac{24}{28} - \frac{3}{7}$

   _____ [2 marks]

10. Insert an inequality sign $<$ or $>$ to make the following statements correct:

a) $\frac{6}{10} \quad \square \quad \frac{3}{4}$ [2 marks]

b) $\frac{8}{7} \quad \square \quad \frac{11}{13}$ [2 marks]

11. Find

a) $\frac{1}{3}$ of 36

_____ [1 mark]

b) $\frac{4}{5}$ of 80

_____ [2 marks]

12. Archie thinks of a number. Five sixths of the number is 60. What is three quarters of the number?

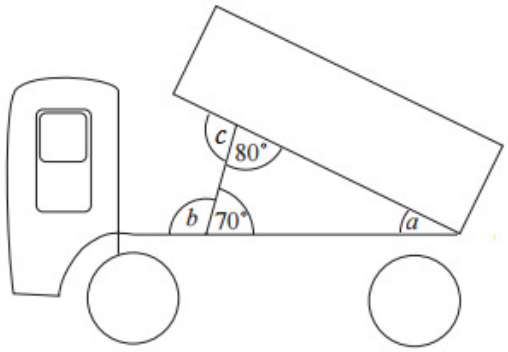
_____ [3 marks]

13. Complete the table:

Fraction	**Decimal**	**Percentage**
		2%
	0.68	
$1\frac{1}{4}$		

[6 marks]

14. The picture shows a tipper truck.



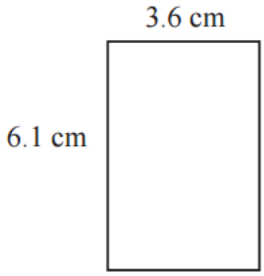
a) Find the angles marked a and b.

_____ [3 marks]

b) The 80° angle decreases to 75° as the tipper tips further. What happens to angle c?

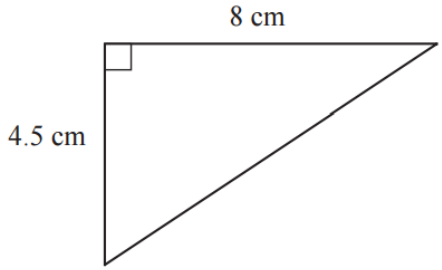
_____ [1 mark]

15. Calculate the perimeter of this rectangle.



_____ [2 marks]

16. Calculate the area of this right-angled triangle.

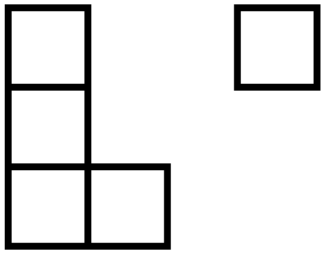


_____ [2 marks]

17. A piece of wire 42cm long is bent into the shape of a rectangle. If the rectangle is twice as long as it is wide, what is its area?

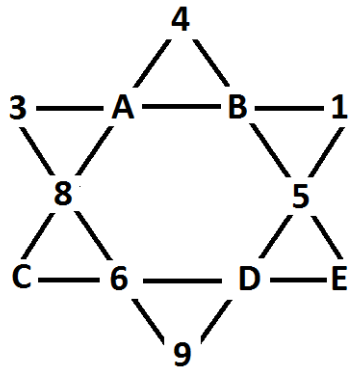
_____ [2 marks]

18. In how many ways can you join the two shapes shown below to make a figure with one line of symmetry?



_____ [2 marks]

19. The numbers 1 to 12 are to be placed such that the sum of the four numbers in each of the six rows in the diagram below is the same. Which letter will be replaced with the number 7?



_____ [4 marks]

20. A twenty-four hour digital watch shows only hours and minutes. How many times each day does the watch show at least two fours simultaneously?

_____ [4 marks]

END OF PAPER