BENENDEN

Lower School Entrance 2018

MATHEMATICS

14+

1 Hour

Name:	……..…….……
School:	……..…….……
Date:	……..…….……

Equipment required: pen, pencil, ruler, protractor, compasses, eraser.
Instructions to Candidates:

1 Attempt all questions. Do not worry if you don't manage to do them all
2 Calculators may be not used Show ALL working
3 Check your answers for accuracy
4 Total points for test

1. Calculate the following:

(a) 456 + 689

…… [2]

(b) 854 – 478

……. [2]

(c) 7.4 x 3.26

……. [2]

(d) 3.81 ÷ 3

……. [2]

(e) 0.786 – 0.2343

……. [2]

2 Calculate the following:

(a) 8^2

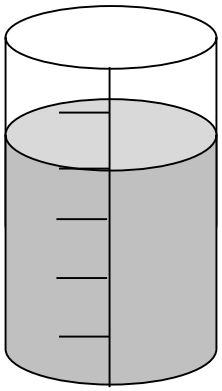
…… [1]

(b) $\sqrt{100}$

…… [2]

(c) 2^5

…… [1]

3 

What fraction of the measuring cylinder is full?
Give your answer in its lowest terms.

……. [2]

4 (a) Write $2\frac{3}{5}$ as an improper fraction

……..

[1]

(b) Write $\frac{27}{4}$ as a mixed number

……..

[1]

5 Calculate the following:

(a) $2 + 3 \times 5$

……..

[1]

(b) $2 - 3(7 - 3)$

……..

[2]

6 Work out the following

(a) $\frac{6}{7} - \frac{3}{14}$

…… [2]

(b) $2\frac{2}{5} + 4\frac{3}{10}$

…….. [3]

7 Calculate the following, giving your answers as simply as possible:

(a) $\frac{3}{5} \times \frac{25}{27}$

…….. [2]

(b) $\frac{2}{5} \div \frac{4}{25}$

…….. [3]

(c) $1\frac{3}{4} \times \frac{8}{21}$

…… [3]

8 Calculate:

(a) $\frac{4}{5}$ of 150g.

……. [2]

(b) 60% of 150g

…… [2]

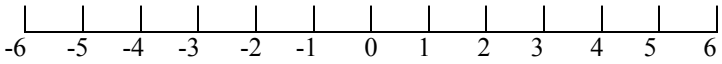
9 Write each number below in the correct box [4]

16 19 2 37

1 23 4 9

	ODD	EVEN
SQUARE NUMBER		
PRIME NUMBER		

10



(a) Subtract 5 from –2

……. [1]

(b) Find the difference between –4 and 2.

…… [1]

(c) Calculate 1 – (-4)

…… [1]

(d) Calculate (-3) + (-2)

…… [1]

(e) Calculate (+4) × (-3)

…… [1]

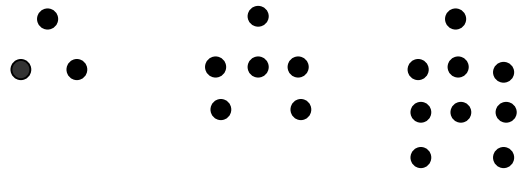
(f) Calculate (-12) ÷ (6)

……. [1]

11 (a) Write the next two numbers in the following sequence:

4, 9, 14, 19, ……., …… [2]

(b) Pattern number (n) ***1*** ***2*** ***3***



Number of dots (D) ***3*** ***6*** ***9***

Write a formula to find the number of dots (D) in the pattern number (n), beginning

D = …….. [1]

12 (a) A film begins at 7.40pm and lasts 1 hour and 20 minutes. At what time does it finish? Write your answer in 12 – hour clock time.

…….. [2]

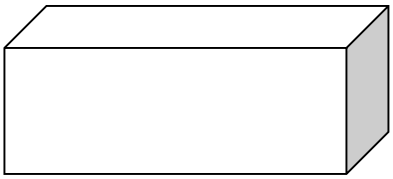
(b) Write your answer to part (a) using 24-hour clock time.

……. [2]

(c) Sarah wants to record the film on a blank CD which can hold four hours of film. How much recording time is left on the CD?

……. [2]

13 (a) How many corners does this cuboid have?

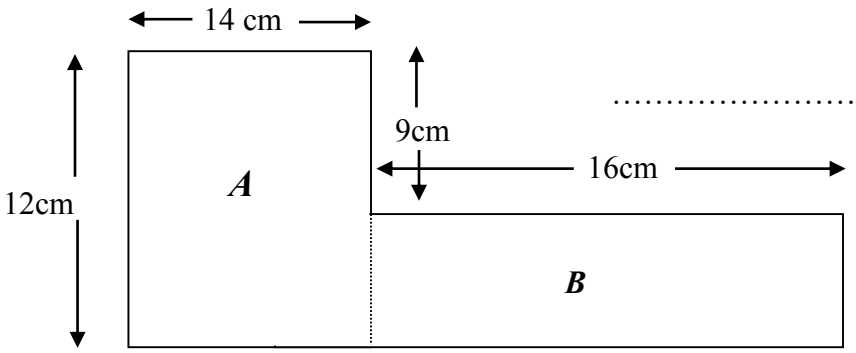


……. [1]

(b) How many edges does it have? …… [1]

(c) How many faces does it have? ……. [1]

14 (a) Find the perimeter of the shape below

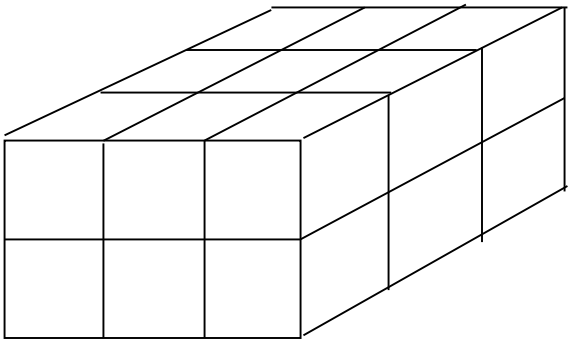


…….. [2]

(b) Find the area of the whole shape

…… [3]

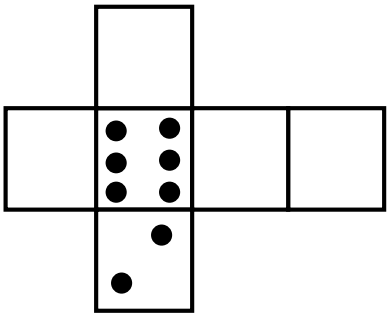
15 Find the volume of the cuboid if each small cube is 1 cubic centimetre. Write the units of of your answer down.



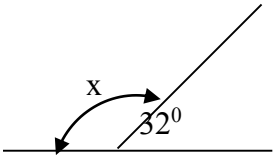
…….. [2]

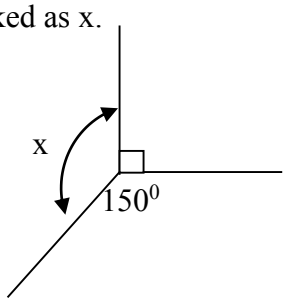
16 On a six sided die, opposite numbers should add up to 7.

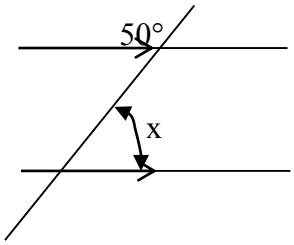
Fill in the rest of the dots on this die. [2]



17 Find the missing angles, marked as x.







…….. ……. …….. [3]

18 (a) What is the mode of the following group of numbers: …… [1]

9, 1, 6, 2, 7, 2

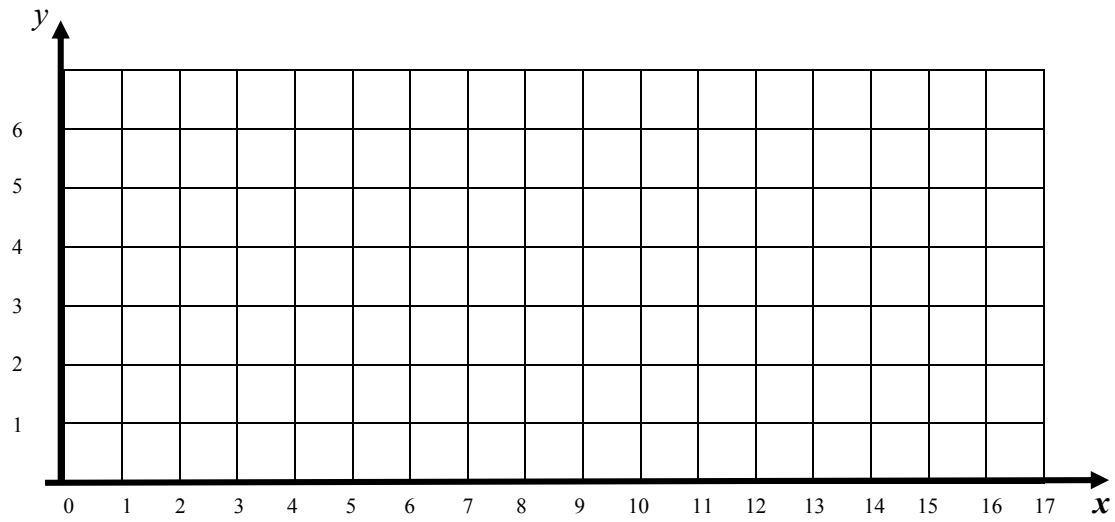
(b) Find the median …… [1]

(c) Calculate the mean

7

…… [2]

19



(a) On the grid above plot the following points and join them up to form a quadrilateral

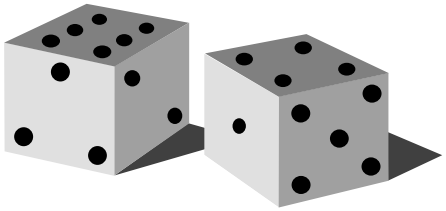
A (2, 2) B (14, 2) C (17, 7) D (5, 7) [4]

(b) Write down which sides are parallel ……. [1]

(c) Write down which sides are equal ……. [1]

(d) Measure the angles of the shape and write down which, if any, angles are equal

…… [2]

20 

Write down the probability of these events happening:

(a) throwing an odd number with a die

……. [1]

(b) drawing a black card from a pack of cards ……. [1]

(c) drawing a black king from a pack of cards ……. [1]

(d) throwing a prime number with a die ……. [1]

21 A rectangle has an of area 24cm^2. Its length is a whole number and so is its width. Find the smallest possible value for the perimeter, showing all of your workings.

[2]

22 Solve the following equations:

(a) $3x - 5 = 4$

…….
[2]

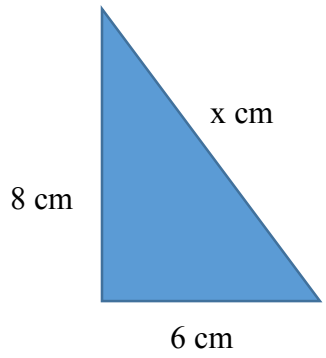
(b) $4x - 7 = 13 - 6x$

…….
[3]

(c) $\frac{2x}{3} = 4$

…….
[2]

23 Find the value of x in the right-angled triangle shown below. Show all your workings.



…….. [3]

TOTAL 100 MARKS