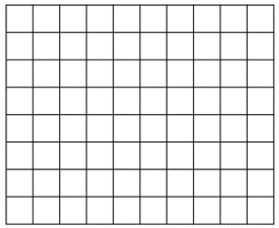
YEAR 11 HOMEWORK – 2R

Complete the questions in each box. Make sure that you show all of your workings

1. There are 3 rods of length:
a - 1, 3a and **a + 2**
The total length of the 3 rods is *L* cm

Find a formula for L. Write it in its simplest form.

2. The length of a rectangle is 3x as long as the width of the rectangle. The area of the rectangle is 27units^2. Draw the rectangle on the grid.



3. 2 + 3 x 4 + 5

4. Jake played a game 20 times. The stem and leaf diagram shows his scores

0	9
1	2 3 3 4 5
2	5 6 6 6 6 7
3	1 3 4 6 8
4	0 2 9

Key
1 | 2 represents 12 points

Find median and range

5. There are 30 children in a nursery school.
At least 1 adult is needed for every 11 children in the nursery.
Work out the least number of adults needed in the nursery.

6. An approximate rule for converting degrees Fahrenheit into degrees Centigrade is:

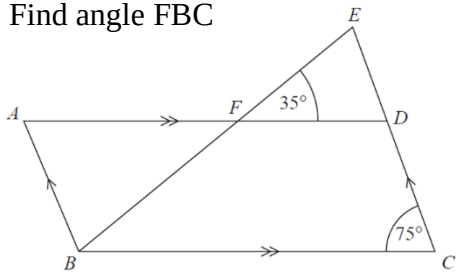
$$C = \frac{F - 30}{2}$$

Use this rule to convert 36°F into °C.

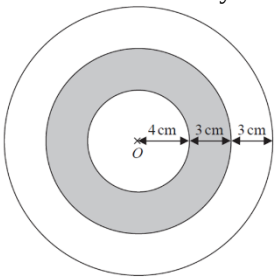
7. Write 120 as a product of its prime factors.

8. The 4 angles of a quadrilateral are in the ratio 2 : 5 : 6 : 7. Find the smallest angle in the quadrilateral

9. *ABCD* is a parallelogram.
EDC is a straight line.
F is the point on *AD* so that *BFE* is a straight line.
Find angle FBC



10. Each circle has centre *O*. Calculate the shaded area.
You must show all your working.



11. The table shows the heights of 150 students:

Height (cm)	Frequency
120 < h ≤ 130	3
130 < h ≤ 140	19
140 < h ≤ 150	36
150 < h ≤ 160	57
160 < h ≤ 170	22
170 < h ≤ 180	11
180 < h ≤ 190	2

a) Write the modal class

b) Estimate the mean height

12.

Solve the equation $x^2 = 16$

13. Solve the inequality

$$5x + 5 > 25$$

14. The table shows boys and girls info from y8 and 9.

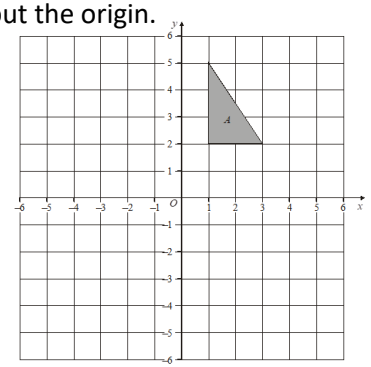
	Y8	Y9
Boys	52	48
Girls	68	52

Find the probability that a student chosen at random is a girl

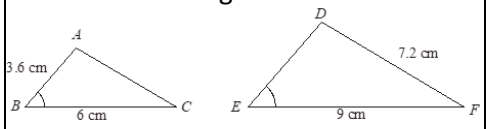
15. A machine fills 600 bottles in 4 minutes. How long does it take to fill 40 bottles? Give your answer in seconds

16. Tim drives at an average of 60km per hour for 2 hrs 45 minutes. Work out how many kilometres he drives

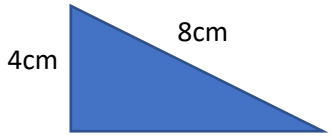
17. Draw the new position of triangle A after a rotation of 90° anticlockwise about the origin.



18. Triangles *ABC* and *DEF* are similar. Calculate the length of *AC.*



19. Use Pythagoras theorem to find the value of a



20. Write down the exact value of:

a) Cos 30

b) Sin 0

c) Tan 45

WWW	
EBI 1	
EBI 2	