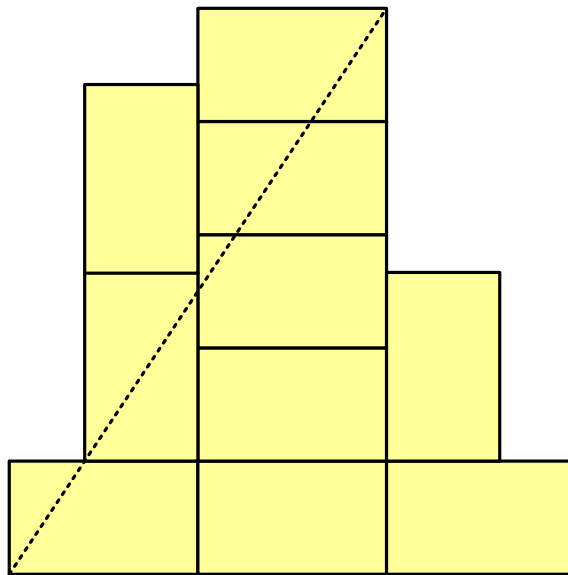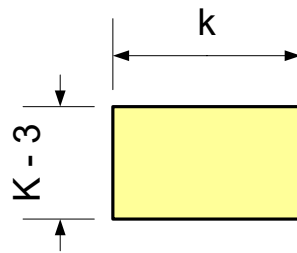1. The shape below is constructed of congruent rectangles.

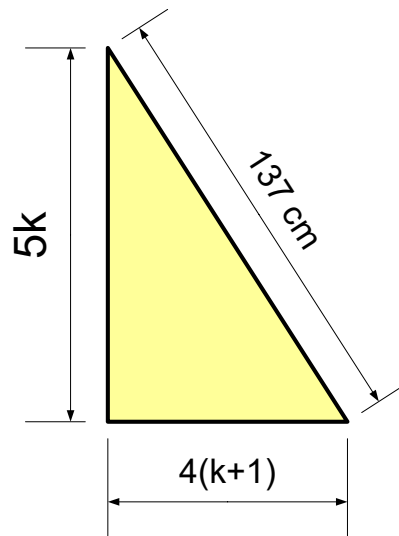
The rectangles are all of the following dimensions:

Calculate the area of the shape at the top if the perimeter is 358 cm.

a) Calculate the area of the shape.
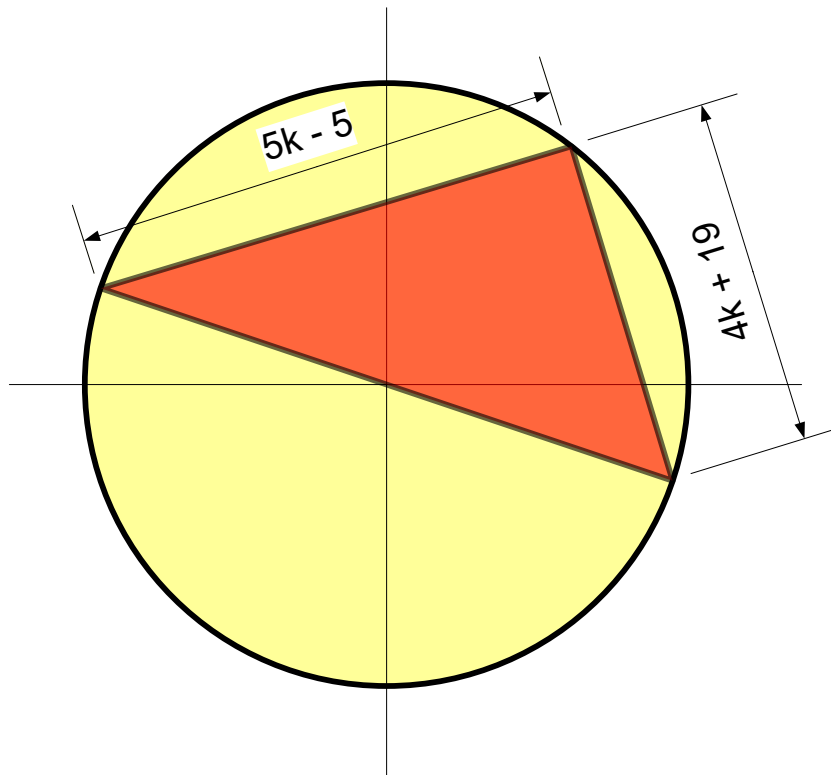
b) Calculate the length of the dotted line

2. The triangle below is a right-angled triangle.

a. Calculate the perimeter of the triangle.

b. Calculate the area of the triangle.

3. The circumference of the following circle is $\frac{7436}{7}$ cm. Take π as $\frac{22}{7}$.
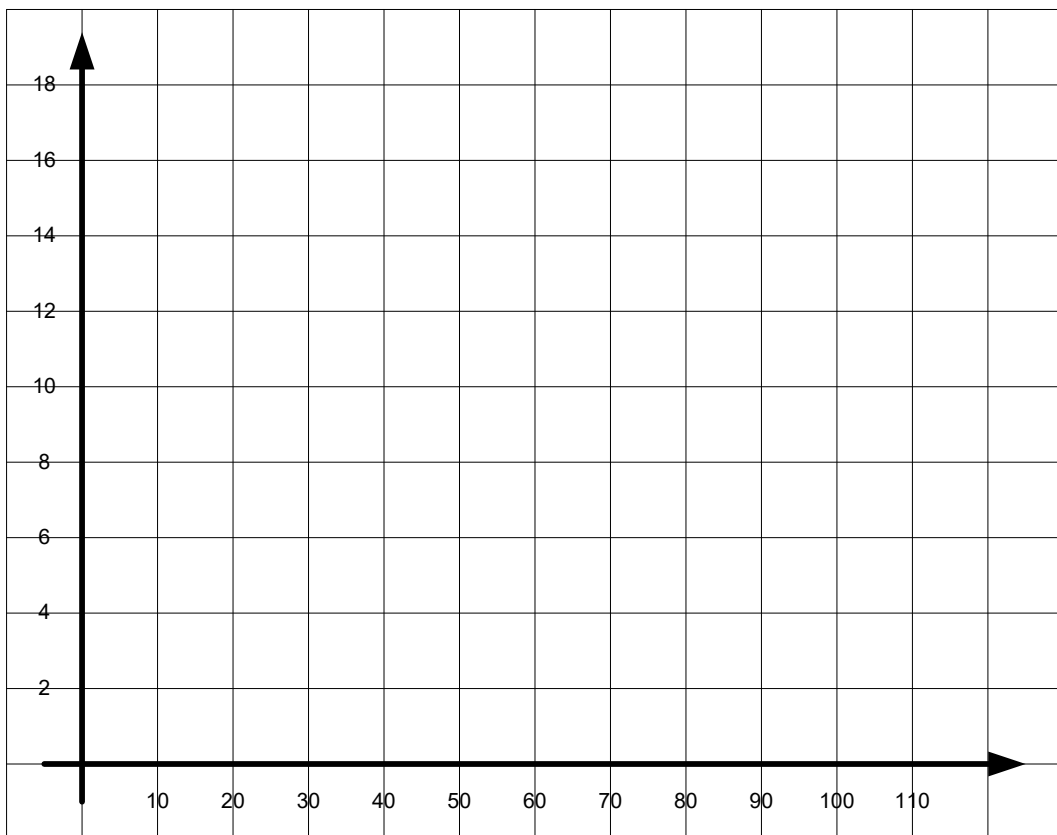

Find the area of the circle outside the triangle.

4. The table below shows the times that it took a class of 12 year olds to run 200m.

Time, t s	Frequency f		
20 < t ≤ 30	3		
30 < t ≤ 36	6		
36 < t ≤ 42	14		
42 < t ≤ 50	16		
50 < t ≤ 60	13		
60 < t ≤ 90	6		

a. In what class interval does the median fall?

b. What is the modal class?
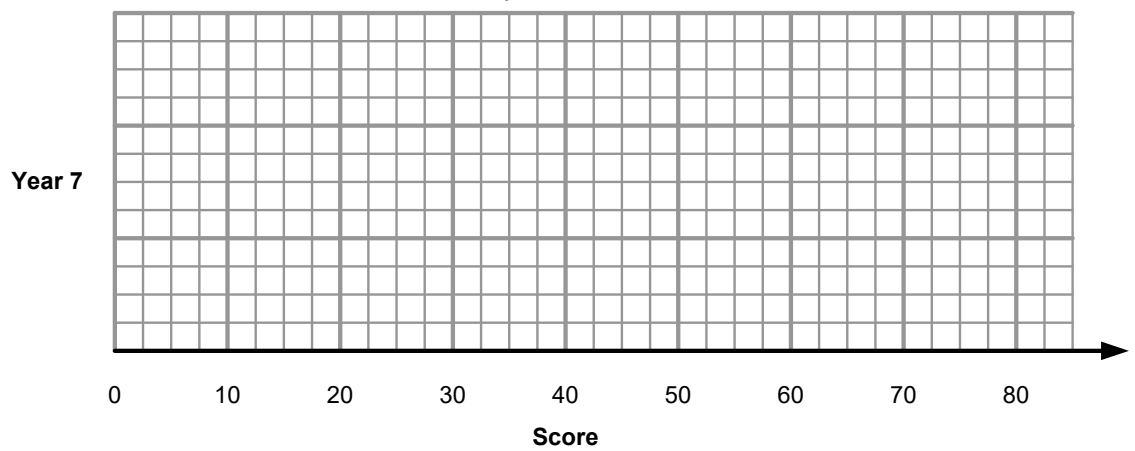
c. Calculate an estimate for the mean.

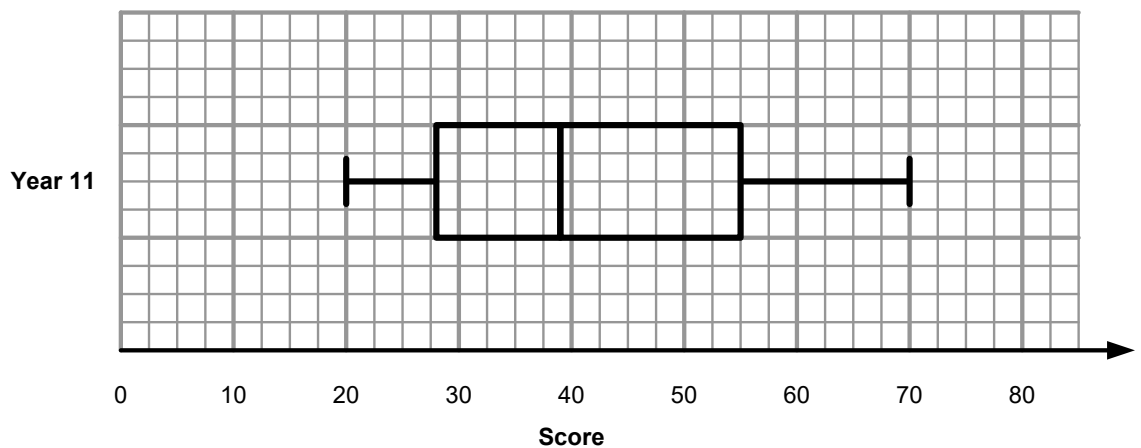d. Draw a frequency polygon of the data above.

5. The table below shows information about the scores that Year 7 achieved in a test.

	Year 7 Scores	Year 11 Scores
Least score	7	
Median	53	
Upper quartile	62	
Interquartile range	12	
Range	59	

a. Use the information above to draw a box plot.

The box plot below shows information about the scores achieved by Year 11.


b. Use the information from the box plot to complete the table at the top of the page.
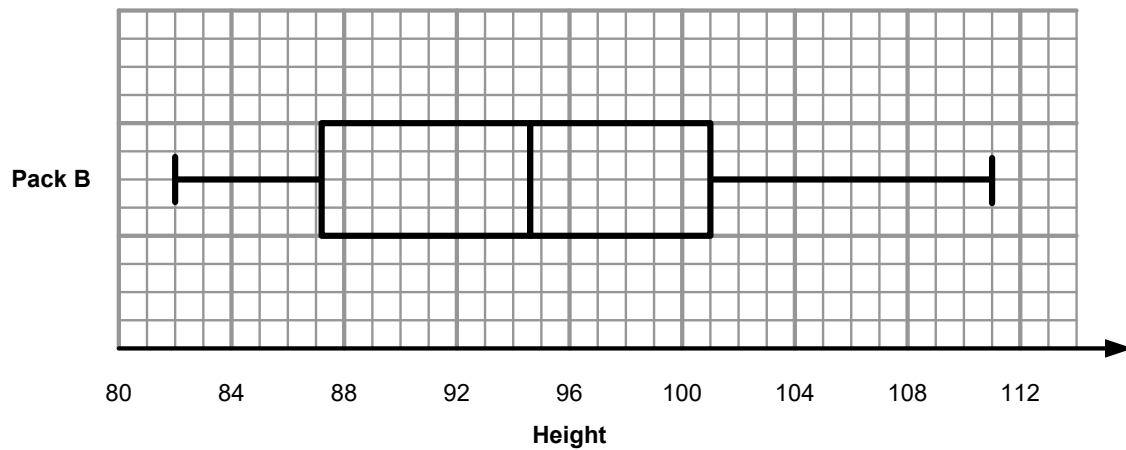
c. Compare the distribution of the scores of the Year 7 children and the Year 11 children.

6. A shipping container is filled with boxes. The heights of the boxes is shown in the list below.

87cm, 92 cm, 102cm, 107cm, 94cm, 97cm, 97cm, 105cm, 113cm, 98cm, 90cm, 85cm, 85cm, 85cm, 83cm, 90cm, 103cm, 107cm, 108cm, 99cm.

a. Use the information above to draw a box plot of the data on the graph below.

Pack A

80   84   88   92   96   100   104   108   112
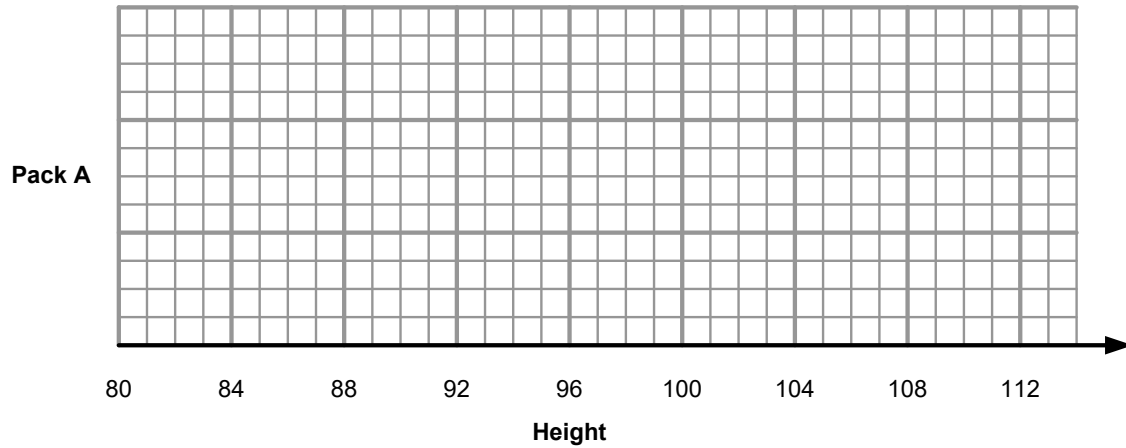
Height

A box plot is drawn for the contents of another shipping container.

Pack B

80   84   88   92   96   100   104   108   112

Height

b. Complete the sentences below and so comment on the distribution of the heights of packs in Container Ship A and container ship B.

The median _____

_____

_____

The range / interquartile range _____

_____

_____

c. Tick the correct boxes in the table below for each statement.

Statement	True	False	It is impossible to tell
Ship A contains the highest box of all.			
There are more boxes in ship B than there are in ship A.			
The interquartile range of ship B is 14cm.			
The data for container B is more widely distributed than for container A.			
The range of data for ship A is greater than that for ship B.			
A half of all boxes in container B are between 87cm and 101cm high.			
A quarter of the boxes in container B are higher than 108 cm.			
The median height of box in container B is 94.8cm high.			
The lower quartile for container A is 88.5cm			
The interquartile range for container A is 15.			

7. Calculate the area of the shaded sector.

60 mm