



7. Using special angles find

(a).  $\cos 135^\circ$

(b).  $\sin 300^\circ$

8 (a). Find  $\lim_{x \rightarrow 1} 3x + 15$

(b). Differentiate  $y = x^2 - 4x$  with respect to  $x$

9. Simplify, giving results in power form

(a).  $7^3 \times 7^2 \times 7^4$

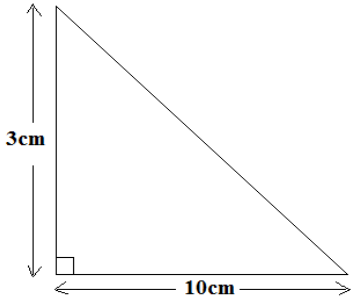
(b).  $(3^4)^2$

10. Solve for  $x$  if  $x+3 > 10$ . Hence represent the results on number line.

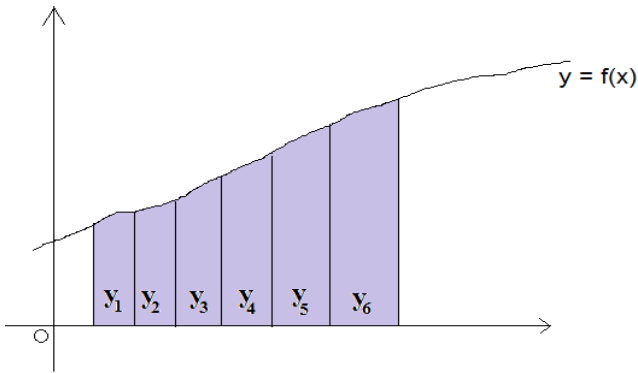
**Section B**  
**Attempt any Five Questions.**

11. (a). Write the formula for area of a triangle

(b). Calculate the area of the below triangle.



12 (a). The shaded area shown below contains six trapezia each of equal width  $h$  and the ordinates are  $y_1, y_2, y_3, y_4, y_5$  and  $y_6$ . Find the total area.



(b). Given a trapezium in which the two parallel sides are of length 4cm and 6cm. If the height (width) of the trapezium is 3cm. Calculate the area of this trapezium.

13. (a). Find the stationary point on the curve  $y = x^3 - 3x^2$

(b). Hence state the maximum and minimum points

14. Given the domain -4, -2, -1, 0, 2, 3. Complete the table below for the mapping  $x \rightarrow x + 3$ .

Domain	$X + 3$	Range
-4	-----	- 1
-2	-2 + 3	-----
-1	-1 + 3	-----
0	-----	3
2	2 + 3	-----
3	-----	6

15. The table below shows the masses of 40 boys taken at random from a group of boys.

Masses	20 - 25	26 - 31	32 - 37	38 - 43
Frequency	10	5	20	5

Calculate.

(a). The arithmetic mean of the masses

(b). Indicate the median class

16. (a). Differentiate  $y = x^3 - 2x^2 + 5x + 1$  with respect to  $x$ .

(b). Find the gradient when (i)  $x = 0$  and  $x = -1$

17. A region is defined by the inequalities  
 $x \leq 4$ ,  $y \geq -3$  and  $3x + 2y \leq 6$ .

Plot a graph for the inequalities and shade out  
the unwanted region.  
(Graph paper is required).