

## Lighthouse 9 (Checkpoint 1)

1. Complete the trig value table

	30	45	60
sin			
cos			
tan			

2. Rationalise the denominator  $\frac{3}{1+\sqrt{5}}$

3.  $a = 120$  is given correct to two sig figs.  
 $b = 120$  given correct to three sig figs  
 For  $a - b$  what is the  
 a) Upper bound? b) Lower bound?

4. Calculate (leave your answer in standard form)

$$(2 \times 10^3) \div (5 \times 10^3) + (8 \times 10^4) \times (3 \times 10^5)$$

5. What decimal multiplier could be used to find a 13% decrease over two years of compound depreciation?

6. What is the perimeter of the sector of a circle with radius of 10 cm and angle  $30^\circ$ ?  
 Give your answer in terms of  $\pi$

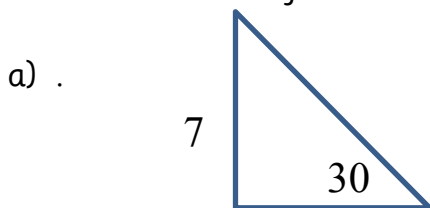
7. Find the coordinates where these graphs intersect:  
 $y = x^2 - 16$        $y = 5x - x^2 + 6$

8. Q(2, 5) and R(8, 23) are the ends of a line segment  
 Find the equation of the line, the length of the line and the equation of the perpendicular bisector.

9. Factorise and solve

a)  $6a^2 + 7a - 5 = 0$       b)  $9a^2 - 16 = 0$

10. Find the area of the triangle



x	f	fd
$0 \leq x \leq 10$	3	
$10 \leq x \leq 15$		6
$15 \leq x \leq ?$	40	5

11. Find the missing values for the histogram.

12. Prove that a pentagon and two regular hexagons do not tessellate.