

# Lighthouse 9 (Checkpoint 1)

1. Complete the trig value table

[YT video](#)

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

[LL video](#)

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?

	30	45	60
sin			
cos			
tan			

[YT video](#)

4. Calculate (leave your answer in standard form)

[LL video](#)

[LL video](#)

[LL video](#)

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

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

[LL video](#)

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  $\pi$

[HM video](#)

7. Find the coordinates where these graphs intersect:

$$y = x^2 - 16 \qquad y = 5x - x^2 + 6$$

[YT video 1](#)

[YT video 2](#)

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.

[LL video \(eq\)](#)

[LL video \(leng\)](#)

[LL video \(perp\)](#)

9. Factorise and solve

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

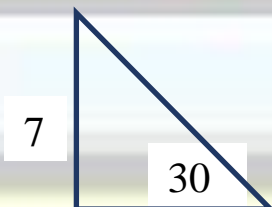
b)  $9a^2 - 16 = 0$

[CM 119](#)

[CM120](#)

10. Find the area of the triangle [YT video \(sin 60\)](#) [YT basic trig](#) [LL video](#)

a) .



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.

[YT video](#)

12. Prove that a pentagon and two regular hexagons do not tessellate. [YT video](#)