

## Lighthouse 8 (Checkpoint 1)

1. Complete and simplify times table surd grid

[LL video 1](#)

[LL video 2](#)

×	$\sqrt{8}$	$\sqrt{3}$	$\sqrt{5}$
$\sqrt{5}$			
$\sqrt{3}$			
$\sqrt{18}$			

2. Rationalise the surd  $\frac{3}{\sqrt{5}}$

[LL video](#)

3.  $a = 120$  cm is given correct to two sig figs.

What is the:

a) Upper bound?      b) Lower bound?

[YT video](#)

4. Calculate the answer, give your answer in denary

a)  $(9 \times 10^3) + (8 \times 10^5)$       b)  $(9 \times 10^3) \times (8 \times 10^5)$       c)  $(6 \times 10^3) \div (8 \times 10^5)$

[LL video](#)

[LL video](#)

[LL video](#)

5. A sphere has a volume of  $36\pi$  cm<sup>3</sup>. Calculate the radius of the sphere.

[LL video 1 \(sphere\)](#)

[LL video 2 \(rearrange\)](#)

[YT video](#)

6. What is  $0.\dot{3}\dot{2}$  as a fraction?

[LL video](#)

7. Solve  $y = 3x + 2$   
 $x^2 + y^2 = 26$

[HM video](#)

8. Show that the lines AB and CD are perpendicular.

A(3, 7) & B(5, 11)

C(4, 3) & D(-4, 7)

[LL video 1](#)

[LL video 2](#)

9. Factorise and solve

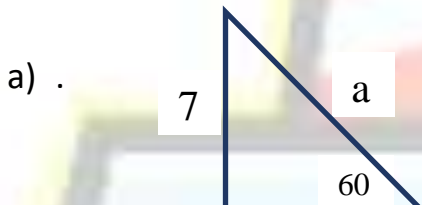
a)  $2a^2 + 3a - 2 = 0$

b)  $4a^2 - 9 = 0$

[CM 119](#)

[CM120](#)

10. Find the value of a in this triangle, rationalise your answer.



x	f	fd
$0 \leq x \leq 10$	3	
$10 \leq x \leq 15$		6
$15 \leq x \leq 25$	40	

[YT video \(sin 60\)](#) [YT basic trig](#) [LL video](#)

11. Find the missing values for the histogram.

[YT video](#)

12. The probability of Ralph being late is 0.3. What is the probability of Ralph being **late at least 2 days** over a 5 day period?

[LL video 1](#)

[LL video 2](#)