Lighthouse 8 (Checkpoint 3)

1. Complete and simplify times table surd grid

×	√2	√6	√7
√3			
√5			
√14			

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

3. a = 160 cm is given correct to two sig figs.
   What is the:
   a) Upper bound? b) Lower bound?

4. Calculate the answer, give your answer in denary
   a) $(8 \times 10^7) + (3 \times 10^5)$ b) $(6 \times 10^{-4}) \times (4 \times 10^2)$ c) $(4 \times 10^2) \div (5 \times 10^7)$

5. A sphere has a volume of 288 π cm^3. Calculate the radius of the sphere.

6. What is $0.2\dot{6}$ as a fraction?

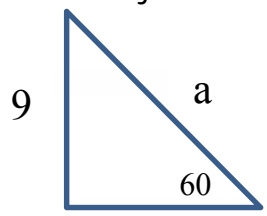
7. Solve $y = 3x - 2$
   $x^2 + y^2 = 58$

8. Show that the lines AB and CD are perpendicular.
   A(-2, 7) & B(5, -14) C(3, 3) & D(9, 5)

9. Factorise and solve

a) $2a^2 + 5a - 3 = 0$ b) $9a^2 - 4 = 0$

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



x	f	fd
0 ≤ x ≤ 10	4	
10 ≤ x ≤ 15		8
15 ≤ x ≤ 25	30	

11. Find the missing values for the histogram.

12. The probability of Ellie being late is 0.7. What is the probability of Ellie being late **at least 3 days** over a 5 day period?