Lighthouse 8 (Checkpoint 4)

1. Complete and simplify times table surd grid

×	√7	√5	√3
√12			
√6			
√8			

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

3. a = 1200 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) $(9 \times 10^7) + (2 \times 10^4)$ b) $(7 \times 10^5) \times (5 \times 10^{-3})$ c) $(3 \times 10^2) \div (4 \times 10^5)$

5. A sphere has a volume of 972 π cm^3. Calculate the radius of the sphere.

6. What is $0.\dot{3}\dot{7}$ as a fraction?

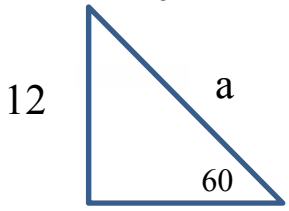
7. Solve $y = 3x - 7$
   $x^2 + y^2 = 41$

8. Show that the lines AB and CD are perpendicular.
   A(-2, 9) & B(6, -7) C(3, 4) & D(7, 6)

9. Factorise and solve

a) $3a^2 + a - 2 = 0$ b) $16a^2 - 25 = 0$

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



x	f	fd
0 ≤ x ≤ 10	7	
10 ≤ x ≤ 25		8
25 ≤ x ≤ 30	60	

11. Find the missing values for the histogram.

12. The probability of Ellie being late is 0.2. What is the probability of Ellie being late **at least 3 days** over a 4 day period?