Lighthouse 8 (Checkpoint 5)

1. Complete and simplify times table surd grid

×	√10	√6	√15
√5			
√6			
√3			

2. Rationalise the surd $\frac{21}{\sqrt{7}}$

3. a = 15000 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) $(7 \times 10^5) + (6 \times 10^4)$ b) $(9 \times 10^{-4}) \times (6 \times 10^6)$ c) $(2 \times 10^3) \div (5 \times 10^5)$

5. A sphere has a volume of 2304 π cm^3. Calculate the radius of the sphere.

6. What is $0.\dot{2}\dot{1}\dot{6}$ as a fraction?

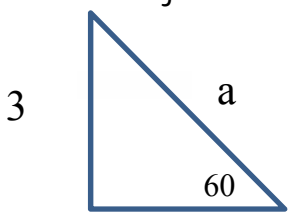
7. Solve $y = 3x + 1$
   $x^2 + y^2 = 53$

8. Show that the lines AB and CD are perpendicular.
   A(-1, 7) & B(3, -5) C(4, 2) & D(10, 4)

9. Factorise and solve

a) $5a^2 + 14a - 3 = 0$ b) $9a^2 - 49 = 0$

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



x	f	fd
0 ≤ x ≤ 20	6	
20 ≤ x ≤ 24		7
24 ≤ x ≤ 40	80	

11. Find the missing values for the histogram.

12. The probability of Ellie being late is 0.3. What is the probability of Ellie being late at least 2 days over a 6 day period?