Lighthouse 8 (Checkpoint 6)

1. Complete and simplify times table surd grid

×	$\sqrt{5}$	$\sqrt{7}$	$\sqrt{11}$
$\sqrt{6}$			
$\sqrt{12}$			
$\sqrt{20}$			

2. Rationalise the surd $\frac{11}{\sqrt{22}}$

3. a = 2.4 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) $(9 \times 10^6) + (7 \times 10^5)$ b) $(3 \times 10^3) \times (8 \times 10^{-4})$ c) $(2 \times 10^4) \div (8 \times 10^7)$

5. A sphere has a volume of 4500 π cm³. Calculate the radius of the sphere.

6. What is $0.3\overset{\cdot}{2}\overset{\cdot}{5}$ as a fraction?
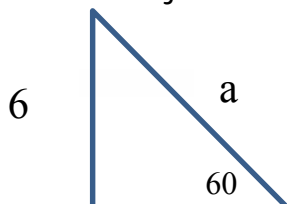
7. Solve $y = 2x - 15$
   $x^2 + y^2 = 65$

8. Show that the lines AB and CD are perpendicular.
   A(0, 23) & B(5, -2)   C(4, 3) & D(14, 5)

9. Factorise and solve

a) $7a^2 - 17a + 6 = 0$ b) $25a^2 - 81 = 0$

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

   6   a
      60

x	f	fd
$0 \le x \le 20$	8	
$20 \le x \le 24$		17
$24 \le x \le 35$	77	

11. Find the missing values for the histogram.

12. The probability of Ellie being late is 0.4. What is the probability of Ellie being late **at least 3 days** over a 5 day period?