

Lighthouse 7 (Checkpoint 4)

1. Complete this times table grid

X	$-4a^2$	$3bc$	$5cd$
$9ed$			
$-8fa$			
$6ad$			

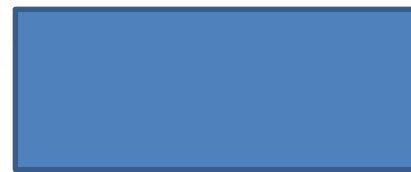
2. Simplify $54t^7a^3 \div 6t^4a$

3. What is the upper bound of 0.0087 if it has been rounded to 2 s.f ?

4. Write as a normal number

a) $(3.4 \times 10^3) \times (5 \times 10^5)$

b) $(9 \times 10^3) \div (3 \times 10^8)$



$a - 3$

5. I invest £320 at 5% compound interest for two years. Calculate the total in the account at the end of the two years.

6. What is the value of a if the area of the rectangle is 96 cm^2 ?

7. A regular polygon's interior angles sum to 1800 degrees. Two are drawn so there is a common vertex. What angle is left around the vertex?

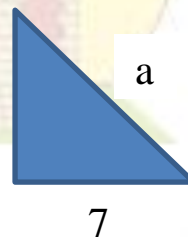
8. $Q(3, 12)$ and $R(-2, -3)$ are the ends of a line segment

a) Find the midpoint of QR

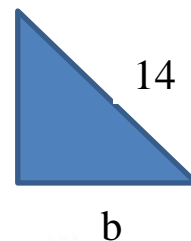
b) Find the gradient of QR

9. Solve $3x + 2y = 25$
 $y = 2x - 12$

6



8



10. Find the missing side lengths leave your answer as a surd (e.g. $\sqrt{51}$)

11. There are 8 reds and 5 green counters in a bag. I take one counter, **do not replace it**, and then take another. What is the probability the two counters are the same colour?

12. Factorise a) $3a^2 - 20a - 7$

b) $25a^2 - 9$