

Lighthouse 7 (Checkpoint 3)

1. Complete this times table grid

X	$-3a^2$	$5bc$	$4cd$
$2ed$			
$-7fa$			
$9ad$			

2. Simplify $49t^6a^2 \div 7t^2a$

3. What is the upper bound of 0.0075 if it has been rounded to 2 s.f ?

4. Write as a normal number

a) $(2.6 \times 10^4) \times (5 \times 10^3)$

b) $(8.0 \times 10^4) \div (4 \times 10^7)$



$2a + 7$

$a + 3$

5. I invest £280 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 136cm^2 ?

7. A regular polygon's interior angles sum to 1440 degrees. Two are drawn so there is a common vertex. What angle is left around the vertex?

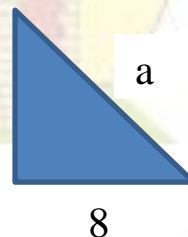
8. $Q(4, 27)$ and $R(-2, -3)$ are the ends of a line segment

a) Find the midpoint of QR

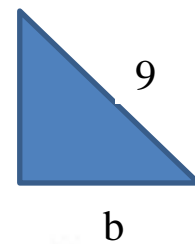
b) Find the gradient of QR

9. Solve $2x + 3y = 28$
 $y = 3x - 9$

13



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

11. There are 7 reds and 4 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) $3a^2 + 14a - 5$

b) $9a^2 - 4$