

Lighthouse 7 (Checkpoint 2)

1. Complete this times table grid

X	$-9a^2$	$8bc$	$6cd$
$7ed$			
$-8fg$			
$6bd$			

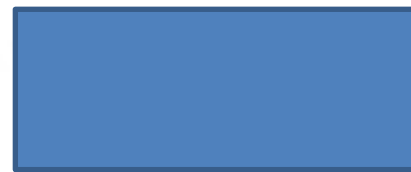
2. Simplify $56a^2b^3 \div 8b^5cd$

3. What is the upper bound of 0.0065 if it has been rounded to 2 s.f ?

4. Write as a normal number

a) $(2.4 \times 10^5) \times (3 \times 10^4)$

b) $(3.0 \times 10^8) \div (6 \times 10^4)$



$a + 5$

$3a + 8$

5. I invest £400 at 10% compound interest for three 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 98cm^2 ?

7. A regular polygon's interior angles sum to 1080 degrees. Two are drawn so there is a common vertex. What angle is left around the vertex?

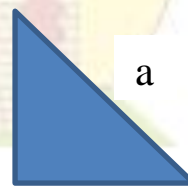
8. $Q(4, 17)$ and $R(-2, -1)$ are the ends of a line segment

a) Find the midpoint of QR

b) Find the gradient of QR

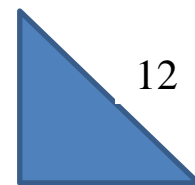
9. Solve $3x + 11y = 36$
 $y = 5 - 2x$

12



7

7



b

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

11. There are 6 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) $4a^2 + 2a - 2$

b) $9a^2 - 16$