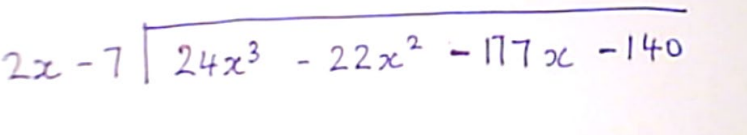
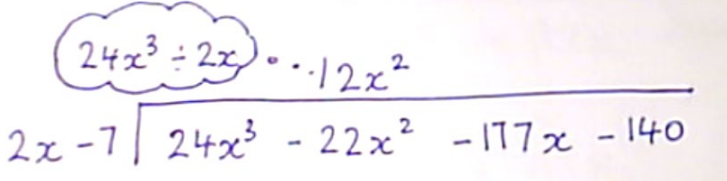
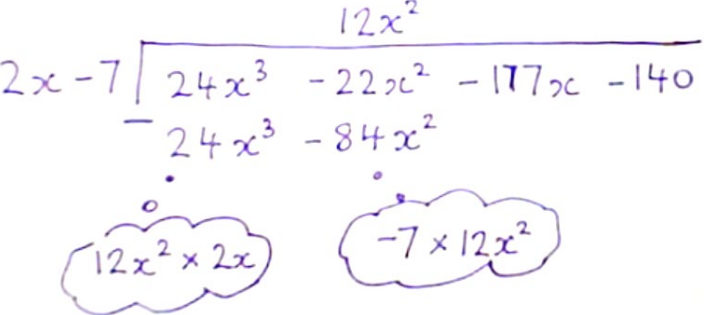
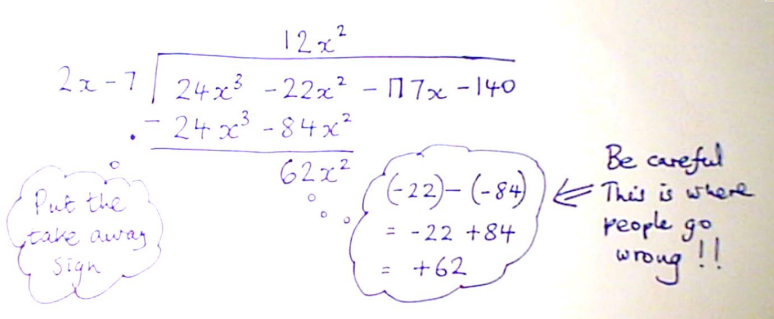


Success Criteria for Long Division of Polynomials

No	Success Criteria	Achieved
1	Set out your long division	
2	Divide by the first term of the divisor 	
3	Write the quotient above the expression of the same order in the dividend 	
4	Multiply the last expression in your quotient by each term in the divisor and write the answer down under the expression in the dividend of the same order. 	
5	Subtract each term in the product you have just calculated from the relevant expressions in the question. Be careful to write the subtract and remember a minus times a minus is a plus. Also think of number lines if you have difficult figuring out minus take a minus. 	

6 Once you have calculated the answer, bring down the next term and repeat the process from Number 2.

$$\begin{array}{r}
 12x^2 + 31x \cdot \cdot \cdot \quad (62x^2 \div 2x) \\
 2x - 7 \overline{) 24x^3 - 22x^2 - 117x - 140} \\
 \underline{- 24x^3 - 84x^2} \quad \downarrow \\
 62x^2 - 117x
 \end{array}$$

7 Write the quotient above the expression of the same order in the dividend

$$\begin{array}{r}
 12x^2 + 31x \cdot \cdot \cdot \quad (62x^2 \div 2x) \\
 2x - 7 \overline{) 24x^3 - 22x^2 - 117x - 140} \\
 \underline{- 24x^3 - 84x^2} \quad \downarrow \\
 62x^2 - 117x
 \end{array}$$

8 Multiply the last expression in your quotient by each term in the divisor and write the answer down under the expression in the dividend of the same order.

$$\begin{array}{r}
 12x^2 + 31x \\
 2x - 7 \overline{) 24x^3 - 22x^2 - 117x - 140} \\
 \underline{- 24x^3 - 84x^2} \quad \downarrow \\
 62x^2 - 117x \\
 \underline{62x^2 - 217x} \\
 40x
 \end{array}$$

$2x \times 31x$
 $-7 \times 31x$

9 Subtract the two new expressions from each other. Be careful with the plus and minus numbers. Think carefully.

$$\begin{array}{r}
 12x^2 + 31x \\
 2x - 7 \overline{) 24x^3 - 22x^2 - 117x - 140} \\
 \underline{- 24x^3 - 84x^2} \quad \downarrow \\
 62x^2 - 117x \\
 \underline{- 62x^2 - 217x} \\
 40x
 \end{array}$$

10	<p>Bring down the next term, in this case, the -140.</p> $ \begin{array}{r} 12x^2 + 31x \\ \hline 2x - 7 \overline{) 24x^3 - 22x^2 - 177x - 140} \\ \underline{- 24x^3 - 84x^2} \quad \downarrow \quad \downarrow \\ 62x^2 - 177x \\ \underline{- 62x^2 - 217x} \quad \downarrow \\ 40x - 140 \end{array} $	
11	<p>Divide the <u>first</u> term of the divisor with the first term of your new expression</p> $ \begin{array}{r} 12x^2 + 31x + 20 \quad \circ \circ \circ 40x \div 2x \\ \hline 2x - 7 \overline{) 24x^3 - 22x^2 - 177x - 140} \\ \underline{- 24x^3 - 84x^2} \quad \downarrow \quad \downarrow \\ 62x^2 - 177x \\ \underline{- 62x^2 - 217x} \quad \downarrow \\ 40x - 140 \end{array} $	
12	<p>Multiply the next term of the quotient by your divisor.</p> $ \begin{array}{r} 12x^2 + 31x + 20 \\ \hline 2x - 7 \overline{) 24x^3 - 22x^2 - 177x - 140} \\ \underline{- 24x^3 - 84x^2} \quad \downarrow \quad \downarrow \\ 62x^2 - 177x \\ \underline{- 62x^2 - 217x} \quad \downarrow \\ 40x - 140 \\ \circ \circ \circ 40x - 140 \circ \circ \circ \\ \circ \circ \circ 2x \times 20 \circ \circ \circ \quad \circ \circ \circ -7 \times 20 \circ \circ \circ \end{array} $	
13	<p>Subtract the remaining expressions from each other.</p> $ \begin{array}{r} 12x^2 + 31x + 20 \\ \hline 2x - 7 \overline{) 24x^3 - 22x^2 - 177x - 140} \\ \underline{- 24x^3 - 84x^2} \quad \downarrow \quad \downarrow \\ 62x^2 - 177x \\ \underline{- 62x^2 - 217x} \quad \downarrow \\ 40x - 140 \\ \underline{40x - 140} \\ 0 \end{array} $	