

U3L3 Factoring Continued....

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Note Expand $5(2x+3) = 10x+15$

A) Review

i) $10x+15$ *take one of these factors*
prime factors!!

✓ GCF: $10x : 2 \cdot 5 \cdot x$
 $15 : 3 \cdot 5$

✓ divide each term by GCF

$$\frac{10x}{5} \quad \frac{15}{5}$$

$$= 2x \quad 3$$

✓ Put GCF outside brackets & divided terms on inside

$$= 5(2x+3) \checkmark \text{ (11)}$$

check: $10x+15$

ii) $9A^3B - 12AB^4$

✓ GCF: $9A^3B : 3 \cdot 3 \cdot A \cdot A \cdot A \cdot B$
 $12AB^4 : 3 \cdot 2 \cdot A \cdot B \cdot B \cdot B \cdot B$

✓ divide $9A^3B$
 $\frac{9A^3B}{3A^2B}$
 $= 3A^2$

$12AB^4$
 $\frac{12AB^4}{3AB}$
 $= 4B^3$

$= 3AB(3A^2 - 4B^3) \checkmark \text{ (11)}$

check: $9A^3B - 12AB^4$

B) Factoring continued...

i) $8rt + 6r^2$

$= 2r(4t+3r) \checkmark \text{ (11)}$

✓ GCF: $8rt : 2 \cdot 2 \cdot r \cdot t$
 $6r^2 : 3 \cdot 2 \cdot r \cdot r$

GCF ii) $4r^2t - 6rt^3 + 2rt$

$= 2rt(2r - 3t^2 + 1) \checkmark$

divided terms

✓ GCF: $4r^2t : 2 \cdot 2 \cdot r \cdot r \cdot t$

$$= \boxed{2r} \quad 6r^2: 3 \cdot 2 \cdot r \cdot r$$

$$\checkmark \quad \frac{\cancel{8r^1t}}{\cancel{2r^1}} \quad \frac{6r^2}{\cancel{2r^1}}$$
$$= 4t \quad = 3r$$

$$\checkmark \text{ GCF: } 4r^2t : \begin{matrix} 2 & 2 & r & r & t \\ \hline 2 & 3 & r & t & t \end{matrix}$$
$$= \boxed{2rt} \quad 6rt^3 : \begin{matrix} 2 & 3 & r & t & t \\ \hline 2 & r & t & t & t \end{matrix}$$

$$\checkmark \quad \frac{\cancel{4r^2t}}{\cancel{2r^1}} \quad \frac{\cancel{6rt^3}}{\cancel{2rt}} \quad \frac{\cancel{2rt}}{\cancel{2rt}}$$
$$= 2r \quad 3t^2 \quad 1$$