* Always check for a GCF first.

* Always check to see if another method can be used to go further.

Ex/ $125x^2 + 400xy + 320y^2$

$5(25x^2 + 80xy + 64y^2)$ Keep going!

M	A
1600	80
40 · 40	✓

$5((25x^2 + 40xy)(+40xy + 64y^2))$

$5(5x(5x+8y) + 8y(5x+8y))$

$5(5x+8y)(5x+8y)$

$\boxed{5(5x+8y)^2}$

Ex/ $2x^7m - 54xmy^6$

$2xm(x^6 - 27y^6)$ Keep going!

x^2 $3y^2$

$\boxed{2xm(x^2-3y^2)(x^4+3x^2y^2+9y^4)}$

S O AP

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Ex/ $(x^6 - 3x^4)(-x^2 + 3)$

$x^4(x^2-3) - 1(x^2-3)$

$\underbrace{(x^4-1)}_{\text{DOTS}}(x^2-3)$ Keep going!

$(x^2+1)\underbrace{(x^2-1)}_{\text{DOTS}}(x^2-3)$ Keep going!

$$\boxed{(x^2+1)(x+1)(x-1)(x^2-3)}$$

Solving

$(4x-1)(x-11) = 0$

$4x - 1 = 0 \qquad x - 11 = 0$

$\frac{4x}{4} = \frac{1}{4} \qquad x = 11$

$x = \frac{1}{4}$ or

$(2x+1)(4x^2-2x+1) = 0$

12

2 · 6

2 · 3

$2x+1 = 0 \qquad 4x^2 - 2x + 1 = 0$

$x = \frac{-1}{2} \qquad x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$x = \frac{2 \pm \sqrt{4-4(4)(1)}}{2(4)} = \frac{2 \pm \sqrt{-12}}{8}$

$= \frac{2 \pm 2i\sqrt{3}}{8} = \frac{1 \pm i\sqrt{3}}{4}$

$x = \frac{-1}{2}, \frac{1 \pm i\sqrt{3}}{4}$

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