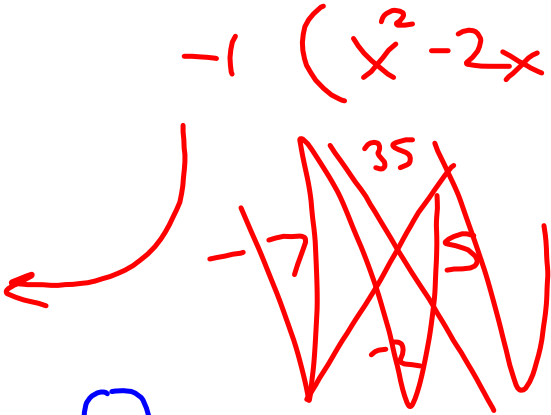


Describe the steps to solve. Do you notice an error?

$$\begin{aligned}\sqrt{2x-35} &= x \\ 2x-35 &= x^2 \\ -x^2+2x-35 &= 0 \\ (x+7)(x-5) &= 0 \\ x &= -7 \quad x=5\end{aligned}$$

$-1(x^2-2x+35)$



Quadratic Formula

$$-x^2 + 2x - 35$$

$$ax^2 + bx + c$$

$$a = -1 \quad b = 2 \quad c = -35$$

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

$$= \frac{-(2) \pm \sqrt{(2)^2 - 4(-1)(-35)}}{2(-1)}$$

$$= \frac{-2 \pm \sqrt{4 - 140}}{-2}$$

$$= \frac{-2 \pm \sqrt{-136}}{-2} = \frac{-2 \pm i\sqrt{136}}{-2}$$

+      -

$$-x^2 + 2x - 35 = 0$$

$$a = -1$$

$$b = 2$$

$$c = -35$$

$$ax^2 + bx + c$$

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

$$= \frac{-(2) \pm \sqrt{(2)^2 - 4(-1)(-35)}}{2(-1)}$$

$$= \frac{-2 \pm \sqrt{4 - 140}}{-2}$$

$$= \frac{-2 \pm \sqrt{-136}}{-2} = \frac{-2 \pm i\sqrt{136}}{-2}$$

$$\begin{array}{c} + \\ - \end{array}$$

$$ax^2 + bx + c = 0$$

$$-x^2 + 2x - 35 = 0$$

$$a = -1$$

$$b = 2$$

$$c = -35$$

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

$$\frac{-(2) \pm \sqrt{(2)^2 - 4(-1)(-35)}}{2(-1)}$$

$$\frac{-2 \pm \sqrt{4 - 140}}{-2}$$

$$\frac{-2 \pm \sqrt{-136}}{-2} = \frac{-2 \pm i\sqrt{136}}{-2}$$

←
↓
  
+
-

$$\begin{array}{r} 6x^2 \\ \underline{6x} \quad \times \\ \hline 6x^2 + 18x \\ \underline{6x} \quad \times \\ \hline 6x^2 + 18x + 9x \\ \underline{6x} \quad \times \\ \hline 6x^2 + 18x + 9x + 27 \end{array}$$

Handwritten work showing the factoring of  $6x^2 + 18x + 9$  using the AC method. The numbers 6, 3, and 9 are circled in green. Red lines and arrows indicate the decomposition of the middle term and the subsequent factoring steps. The final result is  $6x(x + 3)$ .

$$\begin{array}{l}
 \underbrace{3x^3 + 5x^2}_{\text{green}} - \underbrace{12x - 20}_{\text{blue}} \\
 \text{3 2 3 2 5} \\
 \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \\
 \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \\
 x^2 (3x+5) - 4(3x+5) \\
 \underline{\hspace{1.5cm}} \quad \underline{\hspace{1.5cm}} \\
 (x^2 - 4) (3x+5) \\
 \hat{x} \quad \hat{2} \\
 (x+2)(x-2) (3x+5)
 \end{array}$$

$$x^4 + 5x^2 + 4$$

$$\left( x^2 + 4 \right) \left( x^2 + 1 \right)$$

~~$\begin{array}{r} 4 \quad 4 \\ 4 \quad 1 \\ \hline 5 \end{array}$~~

$$x^2 + 4 = 0$$

$$\begin{array}{r} -4 \quad -4 \\ \hline \sqrt{x^2} = \sqrt{4} \end{array}$$

$$x = \pm 2i$$

$$\begin{array}{l} a=3 \\ b=-10 \\ c=8 \end{array} \quad \begin{array}{l} 3x^2 - 10x + 8 \\ \downarrow \quad \quad \quad \downarrow \\ 3x^2 - 4x - 6x + 8 \end{array}$$

AC method

$$\begin{array}{r} 3 \cdot 8 \\ \hline 24 \\ \hline -4 \quad -6 \\ \hline -10 \\ \hline \end{array}$$

$$\begin{array}{r} 1, 24 \\ 2, 12 \\ 3, 8 \\ 4, 6 \end{array}$$

$$\begin{array}{l} x(3x-4) - 2(3x-4) \\ \hline (x-2)(3x-4) \end{array}$$



$$\begin{array}{c}
 \begin{array}{c}
 \begin{array}{c}
 \text{3} \\
 \diagup \quad \diagdown \\
 \text{x} \quad \text{x} \\
 \text{x} \quad \text{x}
 \end{array} \\
 \text{-2} \\
 \begin{array}{c}
 \text{3} \\
 \uparrow \\
 \text{3} \quad \text{3}
 \end{array}
 \end{array} \\
 (x - 3)(x^2 + 3x + 3^2)
 \end{array}$$

Same  
Opp  
Always  
Positive

50

$$9y^2 - 900$$

$$9(y^2 - 100)$$

$\begin{matrix} \wedge & \wedge \\ 33 & 1010 \end{matrix}$

$$9(y+10)(y-10)$$

GCF

Diff of  $\square$

$$\textcircled{53} \quad 12a^2 + 36a + 27$$

$\begin{array}{ccc} 2 & 2 & 3 \\ \downarrow & \downarrow & \downarrow \\ 2 & 2 & 3 \end{array}$

GCF

$$3(4a^2 + 12a + 9)$$

AC method

$$3(4a^2 + 6a + 6a + 9)$$

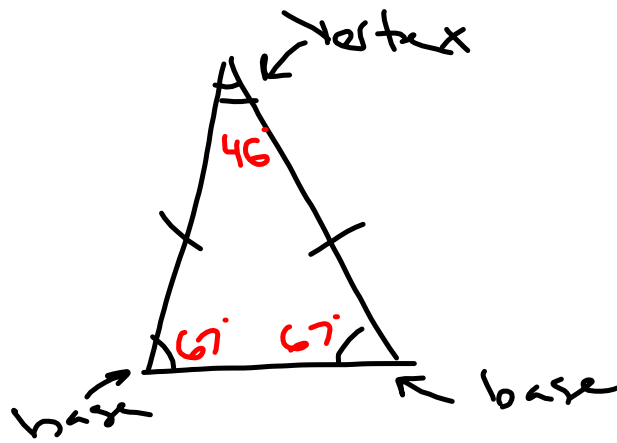
$$3(2a(2a+3) + 3(2a+3))$$

$$3(2a+3)(2a+3)$$

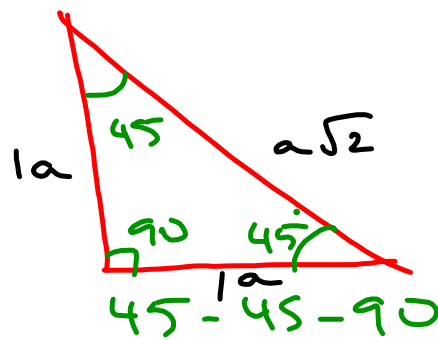
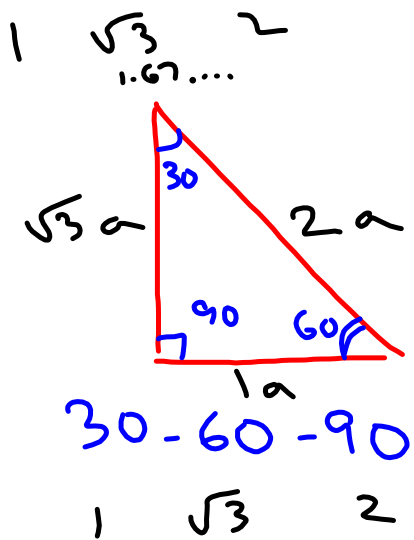
$$3(2a+3)^2$$

$$\begin{array}{r} 36 \\ 6 \times 6 \\ \hline 12 \end{array}$$

412



$$\frac{180 - 46}{2} = \frac{134}{2} = 67$$



$$a^2 + b^2 = c^2$$

$$(1a)^2 + (1a)^2 = c^2$$

$$a^2 + a^2$$

$$\sqrt{2a^2} = \sqrt{c^2}$$

$$a\sqrt{2} = c$$

$$6x^2 + 18x$$

Handwritten prime factorization for  $6x^2$ :  $2 \cdot 3 \cdot x \cdot x$   
Handwritten prime factorization for  $18x$ :  $2 \cdot 3 \cdot 3 \cdot x$

GCF

$2 \cdot 3 \cdot x$

$$6x(x + 3)$$

$$\underbrace{3x^3 + 5x^2}_{2^2 3x} - \underbrace{12x - 20}_{2^2 5} \quad \text{Grouping}$$

$$x^2 (3x + 5) - 4 (3x + 5)$$

$$(x^2 - 4)(3x + 5)$$

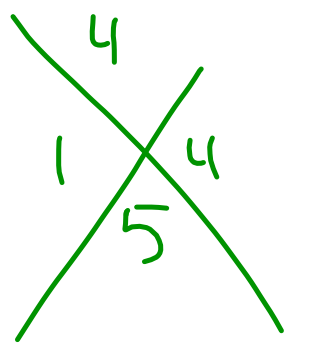
$$(x + 2)(x - 2)(3x + 5)$$

$$x^4 + 5x^2 + 4$$

$$(x^2 + 1)(x^2 + 4)$$

$$(x + i)(x - i)(x + 2)(x - 2)$$

$$(x + 10)(x - 4)$$



$$x^2 + 4 = 0$$

$$x^2 = -4$$

$$\sqrt{x^2} = \sqrt{-4}$$

$$x = \pm 2i$$



$a \neq 1$

AC Method

$$3x^2 - 10x + 8$$

↓                      ↓                      ↓

$$3x^2 - 4x - 6x + 8$$

(blue brace)                      (red brace)

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

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

$a \cdot c$		
$3 \cdot 8$		$1, 24$
$24$		$2, 12$
$-4$		$3, 8$
$-6$		$4, 6$
$-10$		
$b$		

$$x^3 - 27$$

$\begin{array}{c} \diagup \quad \diagdown \\ x \quad x \quad x \\ \diagdown \quad \diagup \\ 3 \quad 3 \quad 3 \end{array}$

$$(x - 3)(x^2 + 3x + 3^2)$$

$$(x - 3)(x^2 + 3x + 9)$$

Same  
Opp  
Always  
Positive

50

$$9y^2 - 900$$

9 (  $y^2 - 100$  )

$\begin{matrix} \uparrow & \uparrow \\ 3 & 3 \end{matrix}$        $\begin{matrix} \uparrow & \uparrow \\ 10 & 10 \end{matrix}$

$\begin{matrix} \uparrow & \uparrow \\ 3 & 3 \end{matrix}$        $\begin{matrix} \uparrow \\ 100 \end{matrix}$

$$9(y+10)(y-10)$$

GCF

Diff. of  $\square$

(53)

$$12a^2 + 36a + 27$$

220 a a    220 3 a    333

GCF

$$3(4a^2 + 12a + 9)$$

$$4a^2 + 6a + 6a + 9$$

$$2a(2a+3) + 3(2a+3)$$

$$3(2a+3)(2a+3)$$

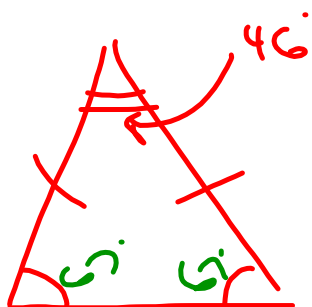
$$3(2a+3)^2$$

AC method

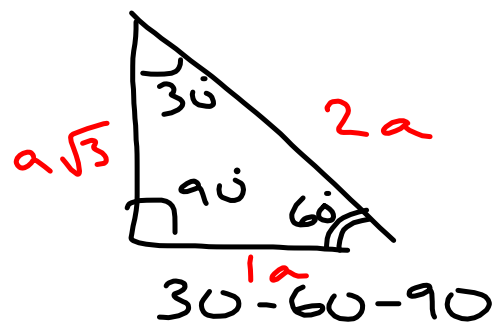
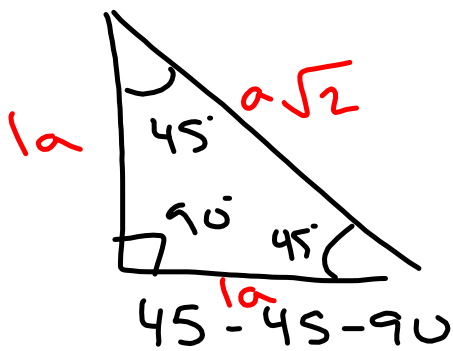
$$\begin{array}{r} 4 \cdot 9 \\ 36 \\ \hline 6 \quad 6 \\ \hline 12 \end{array}$$

1, 36  
2, 18  
3, 12  
4, 9  
6, 6

42



$$\frac{180 - 46}{2} = \frac{134}{2}$$
$$\text{base } \angle = 67^\circ$$

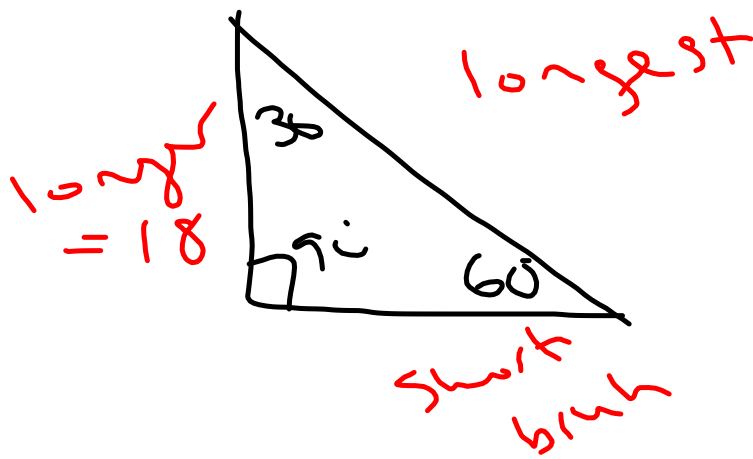


$$\begin{array}{ccc}
 1 & 1 & \sqrt{2} \\
 a^2 + b^2 = c^2 & & \\
 1^2 + 1^2 = c^2 & c = \sqrt{2} & \\
 1 + 1 & & 
 \end{array}$$

$$\begin{array}{ccc}
 1 & \sqrt{3} & 2 \\
 1.73 \dots & & 
 \end{array}$$

$$\sqrt{2} = \sqrt{2}$$

44



$$a\sqrt{3} = 18$$





$$6x^2 + 18x$$

Handwritten annotations: Red lines above the 6 and 18. Green circles around the 2 and 3 in the prime factorization of 6, and around the 3 and 6 in the prime factorization of 18. A red 'x' is written below the 3 in the prime factorization of 6, and a red 'x' is written below the 6 in the prime factorization of 18.

GCF

$$6x(x + 3)$$

$$\begin{array}{c}
 3x^3 + 5x^2 - 12x - 20 \\
 \underbrace{\hspace{10em}} \\
 x^2 (3x+5) - 4(3x+5)
 \end{array}$$

*(Handwritten notes: Red circles around 3x and 5 in the first row. Red arrows pointing from 3x and 5 to the 3x+5 in the second row. Blue dashed lines above -12x and -20. Blue underline under the entire expression.)*

$$\begin{array}{c}
 (x^2 - 4) (3x+5) \\
 \underbrace{\hspace{2em}} \quad \underbrace{\hspace{2em}} \\
 (x+2) (x-2) (3x+5)
 \end{array}$$

*(Handwritten notes: Red arrows pointing from x^2 to x and x, and from 4 to 2 and 2. Red text "D.F.F of" followed by a red square symbol.)*

$$x^2 + 6x - 40$$

$$a=1$$

$$(x+10)(x-4)$$

$$\begin{array}{ccc} & \cdot & \\ & -40 & \\ +10 & \times & -4 \\ & 6 & \\ & + & \end{array}$$

$$\begin{array}{l} 1, 40 \\ 2, 20 \\ 10, 4 \\ 5, 8 \end{array}$$

$$x^4 + 5x^2 + 4$$

$$\left( \overset{\uparrow}{x^2} + 4 \right) \left( \overset{\uparrow}{x^2} + 1 \right)$$

$\begin{matrix} \uparrow & \uparrow \\ x & x & 2 & 2 \end{matrix}$

$$x^2 + 4 = 0$$

$$\begin{array}{r} -4 & -4 \\ \hline \sqrt{x^2} & = \sqrt{-4} \end{array}$$

$$x = \pm 2i$$

$$(x+10)(x-4)$$

~~$$\begin{array}{cc} & 4 \\ 4 & & 1 \\ & 5 & \end{array}$$~~

$$\begin{array}{l}
 3x^2 - 10x + 8 \\
 \downarrow \quad \quad \quad \uparrow \quad \quad \quad \downarrow \\
 3x^2 - 4x - 6x + 8 \\
 \underbrace{\hspace{10em}}_{\text{green}} \quad \underbrace{\hspace{10em}}_{\text{blue}} \\
 x(3x - 4) - 2(3x - 4) \\
 \hline
 (x-2)(3x-4)
 \end{array}$$

AC Method

3:4	1,24
24	1,12
4	8,3
-6	4,6
-10	
b	
+	

$$\begin{array}{c} x^3 - 27 \\ \begin{array}{cc} \wedge & \wedge \\ xxx & 333 \\ \wedge & \wedge \\ a=x & b=3 \end{array} \end{array}$$
$$(x - 3)(x^2 + 3x + 3^2)$$

Same  
Opp  
Always  
Positive

50

$$9y^2 - 900$$

GCF

$$9(y^2 - 100) \quad \text{Diff of } \square$$

$\begin{matrix} \wedge & \wedge \\ 5y & 10 \ 10 \end{matrix}$

$$9(y+10)(y-10)$$

$$\textcircled{53} \quad 12a^2 + 36a + 27$$

$\overset{2}{\underset{2}{\uparrow}} \overset{3}{\underset{3}{\uparrow}} a a \quad \overset{2}{\underset{2}{\uparrow}} \overset{3}{\underset{3}{\uparrow}} a \quad \overset{3}{\underset{3}{\uparrow}} 3 3$

GCF

$$3(4a^2 + 12a + 9)$$

$$4a^2 + 6a + 6a + 9$$

$$(2a(2a+3) + 3(2a+3))$$

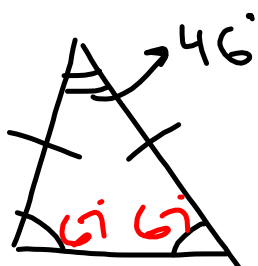
$$\boxed{3(2a+3)(2a+3)}$$

AC Method

$$\begin{array}{ccc} & 36 & \\ 6 & \times & 6 \\ & 12 & \end{array}$$

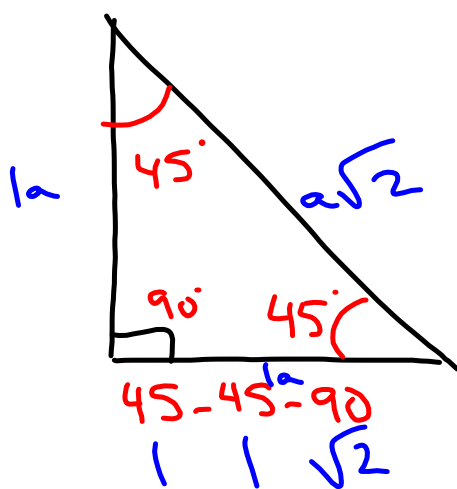


(42)



$$\frac{180 - 46}{2} = \frac{134}{2}$$
$$\text{base } \angle = 67^\circ$$

 $\angle = \text{angle}$

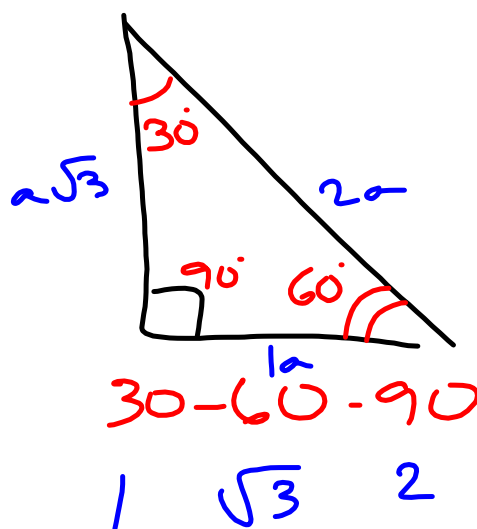


$$a^2 + b^2 = c^2$$

$$1^2 + 1^2 = c^2$$

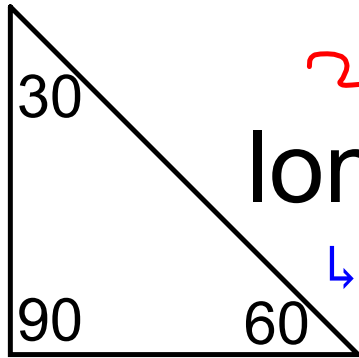
$$\sqrt{2} = \sqrt{c^2}$$

$$\sqrt{2} = c$$



44

$2\sqrt{3}$   
longer  
18



$$2a = 12\sqrt{3}$$

longest  
↳ hypotenuse

short bruh

$$1a = 6\sqrt{3}$$

$$2 \cdot 6\sqrt{3} = 12\sqrt{3}$$

$$\frac{18}{\sqrt{3}} = \frac{a\sqrt{3}}{\sqrt{3}}$$

$$a = \frac{18 \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{18\sqrt{3}}{3}$$

$$a = 6\sqrt{3}$$

$$x^3 + 3x^2 - x$$

$\begin{matrix} \cdot & \cdot & \cdot \\ \diagdown & \diagup & \diagdown \\ x & x & x \end{matrix}$ 
 $\begin{matrix} \cdot & \cdot & \cdot \\ \diagdown & \diagup & \diagdown \\ 3 & x & x \end{matrix}$ 
 $\begin{matrix} \cdot \\ \diagdown \\ - & 1 & x \end{matrix}$

$x (x^2 + 3x - 1)$   
 $ax^2 + bx + c$

What do they share?

$a \cdot c$	$1, -1$
$-1$	
$3$	
$b$	

$$\frac{6x^2}{6x} + \frac{18x}{6x}$$
$$6x (x + 3)$$

$$\begin{array}{r}
 3x^3 + 5x^2 - 12x - 20 \\
 \hline
 x^2 \left( \underbrace{3x + 5}_{x^2} \right) - 4 \left( \underbrace{3x + 5}_{-4} \right) \\
 \hline
 (x^2 - 4) (3x + 5)
 \end{array}$$

The diagram shows the factoring process for the polynomial  $3x^3 + 5x^2 - 12x - 20$ . The polynomial is grouped into two pairs:  $(3x^3 + 5x^2)$  and  $(-12x - 20)$ . The first pair is factored by  $x^2$ , resulting in  $x^2(3x + 5)$ . The second pair is factored by  $-4$ , resulting in  $-4(3x + 5)$ . The common factor  $(3x + 5)$  is then factored out, yielding the final factored form  $(x^2 - 4)(3x + 5)$ .

$$2 \left( \frac{2x^3}{2} + \frac{9x^2}{2} - \frac{18x}{2} - \frac{72}{2} \right)$$

$$2 \left( \underbrace{x^3 + 4x^2}_{\text{green}} - \underbrace{9x - 36}_{\text{blue}} \right)$$

⋮

$$x^2 - 9$$

$$\begin{array}{cc} \swarrow & \searrow \\ x & 3 \\ \swarrow & \searrow \\ (x+3) & (x-3) \end{array}$$

Diff. of  $\square$

$$ax^2 + bx + c$$

$$1x^2 + 0x - 9$$

$$\begin{array}{c}
 a \cdot c \\
 -9 \\
 \hline
 -3 \quad 3 \\
 \hline
 0 \\
 \hline
 b
 \end{array}$$

$$\begin{array}{c}
 9 \\
 3 \cdot 3
 \end{array}$$

$$(x-3)(x+3)$$



$$3x^2 - \underline{10x} + 8$$

AC method

~~$$\begin{array}{r}
 \text{a.c} \\
 24 \\
 -6 \quad -4 \\
 -10 \\
 b
 \end{array}$$~~

1, 24  
6, 4  
12, 2

$$\underbrace{3x^2 - 6x}_{\text{blue}} \quad \underbrace{-4x + 8}_{\text{red}}$$

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

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

$$3x^2 - 10x + 8$$

AC method

multiply  
a.c

~~$$\begin{array}{r}
 24 \\
 -6 \quad -4 \\
 -10
 \end{array}$$~~

$$\begin{array}{l}
 1, 24 \\
 6, 4 \\
 12, 2
 \end{array}$$

b  
Add

$$\left(x - \frac{6}{3}\right) (x - 4)$$

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

§ 5 (30)

$$3b - a = -7$$

$$5a + 6b = 14$$

Solve for a.

$$3b - a = -7$$

$$+a \quad +a$$

$$\hline 3b = a - 7$$

$$+7 \quad +7$$

$$\hline a = 3b + 7$$

Substitute  
for a in next  
eq.

$$5(3b + 7) + 6b = 14$$

$$15b + 35 + 6b = 14$$

$$21b + 35 = 14$$

$$-35 \quad -35$$

$$\hline 21b = -21$$

$$\frac{21}{21} \quad \frac{-21}{21}$$

$$\hline b = -1$$

Solve  
for a

$$3(-1) - a = -7$$

$$-3 - a = -7$$

$$+a \quad +a$$

$$\hline -3 = -7 + a$$

$$+7 \quad +7$$

$$\hline a = 4$$

$$x^3 + 3x^2 - x$$

$\overset{2}{x} \overset{1}{x} \otimes$      $3x \otimes$      $-1 \otimes$

GCF

"What do they share?"

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

$$x \left( \frac{x^3}{x} + \frac{3x^2}{x} - \frac{x}{x} \right)$$

$$6x^2 + 18x$$

~~$6x^2$~~   ~~$+ 18x$~~

~~$6x$~~   ~~$6x$~~

$$6x(x + 3)$$

~~$2 \cdot 3 \cdot x \cdot 3$~~   ~~$2 \cdot 3 \cdot 3 \cdot x$~~

$$6x(x + 3)$$



$$\begin{array}{l} \overbrace{3x^2 + 5x}^{\text{red}} - \overbrace{12x - 20}^{\text{green}} \\ \cdot \underbrace{(3x+5)}_{\text{red}} - \cdot \underbrace{4(3x+5)}_{\text{green}} \end{array}$$

$$\text{Diff. of } \square \begin{array}{l} \underbrace{(x^2 - 4)}_{\substack{\wedge \\ x \quad x \\ \wedge \\ (x+2)(x-2)}} \end{array} (3x+5)$$

$$ax^2 + bx + c$$
$$1x^2 + 0x = 4$$

$a=1$   
BIG X

$$\begin{array}{r} a \cdot c \\ -4 \\ -2 \quad 2 \\ \hline 0 \\ b \end{array}$$

$$(x-2)(x+2)$$



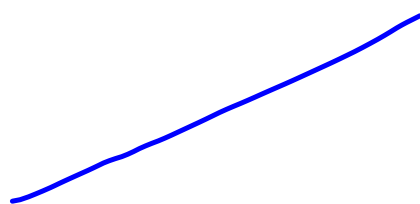
$$3x^2 - 10x + 8$$

a ≠ 1  
AC  
method

$$\begin{array}{c}
 \text{a.c} \\
 \begin{array}{|c|} \hline 24 \\ \hline \end{array} \\
 \begin{array}{|c|} \hline -6 \\ \hline \end{array} \quad \begin{array}{|c|} \hline -4 \\ \hline \end{array} \\
 \begin{array}{|c|} \hline -10 \\ \hline \end{array} \\
 \text{b}
 \end{array}$$

- 1, 24
- 2, 12
- 3, 8
- 6, 4

$$\begin{array}{c}
 \left( \begin{array}{c} x-6 \\ 3 \end{array} \right) \quad \left( \begin{array}{c} x-4 \\ 3 \end{array} \right) \\
 \swarrow \quad \searrow \\
 (x-2) \quad (3x-4)
 \end{array}$$



$$\begin{aligned} & \underbrace{3x^2 - 6x}_{3x} - \underbrace{4x + 8}_{-4} \\ & \underline{3x(x-2)} - \underline{4(x-2)} \\ & \underline{(3x-4)(x-2)} \end{aligned}$$

$$\begin{array}{l}
 x^3 + 3x^2 - x \\
 \text{xx} \textcircled{x} \quad 3 \text{x} \textcircled{x} \quad -1 \textcircled{x} \\
 x (x^2 + 3x - 1)
 \end{array}$$

"What do they share?"

$$\begin{array}{l}
 \frac{x^2}{x} + \frac{3x^1}{x} - \frac{x}{x} \\
 x (x^2 + 3x - 1)
 \end{array}$$

$$6x^2 + 18x$$
$$6x \left( x + 3 \right)$$

$$\begin{array}{c} \begin{array}{c} \overbrace{x^2 + x^2}^{x^2} + \underbrace{x + 1}_{1} \\ \cdot \end{array} \\ \begin{array}{c} (x + 1) + 1(x + 1) \\ \cdot \end{array} \\ (x^2 + 1)(x + 1) \end{array}$$

$$1x^2 + 6x - 40$$

$ax^2 + bx + c$

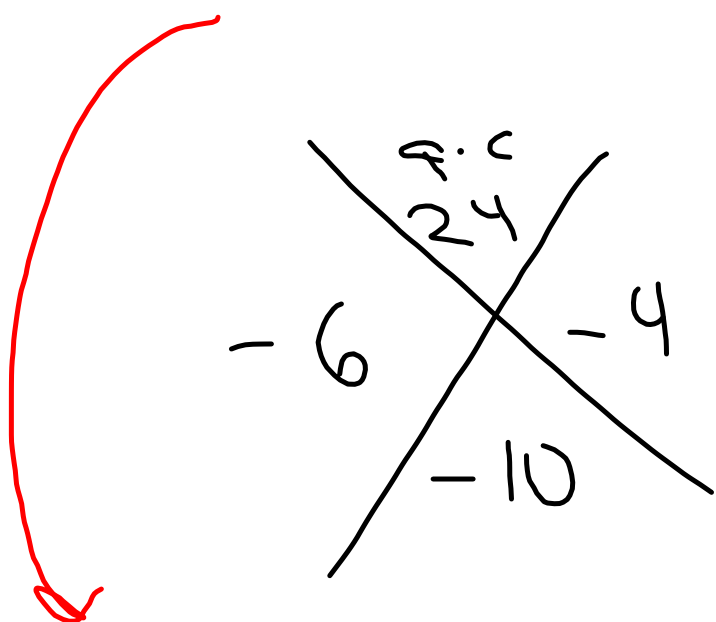
~~$$\begin{array}{cc} & a \cdot c \\ & -40 \\ -4 & & 10 \\ & b \\ & 6 \end{array}$$~~

$a = 1$

40, 1  
2, 20  
4, 10  
5, 8

$$(x-4)(x+10)$$

$$3x^2 - 10x + 8$$

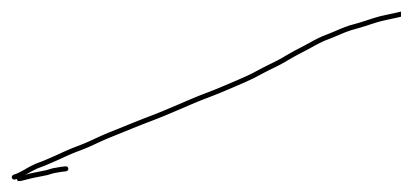


$$a \neq 1$$

- 6, 4
- 2, 12
- 3, 8

$$\left(x - \frac{6}{3}\right) \left(x - \frac{4}{3}\right)$$

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



$$3x^2 - 10x + 8$$
$$\begin{array}{r} \cancel{3x^2} - 6x - 4x + 8 \\ \hline \phantom{\cancel{3x^2}} - 6x - 4x + 8 \\ \phantom{\cancel{3x^2}} \phantom{- 6x} - 4x + 8 \\ \phantom{\cancel{3x^2}} \phantom{- 6x} \phantom{- 4x} + 8 \end{array}$$

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

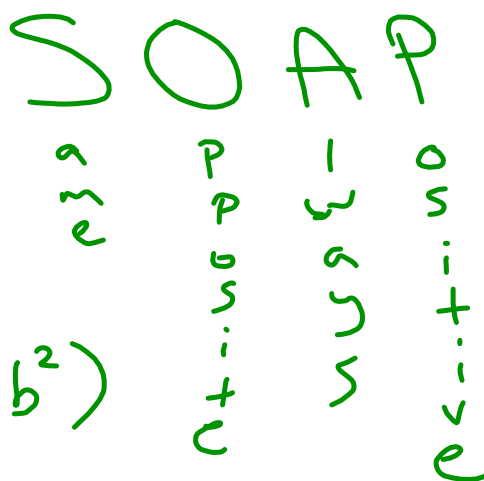
$(3x-4)(x-2)$



$$x^3 - 27$$

$\begin{array}{c} \wedge \\ x \end{array}$ 
 $\begin{array}{c} \wedge \\ 3 \end{array}$

$a = x$ 
 $b = 3$



$$(a - b)(a^2 + ab + b^2)$$

$$(x - 3)(x^2 + 3x + 9)$$

$$\textcircled{19} \quad \sqrt{\frac{20}{27}} = \frac{\sqrt{20}}{\sqrt{27}}$$
$$= \frac{2\sqrt{5} \cdot \sqrt{3}}{3\sqrt{3} \cdot \sqrt{3}}$$
$$= \frac{2\sqrt{15}}{9}$$

Simplify radicals

$$\begin{array}{l} 2 \quad \sqrt{20} = 2\sqrt{5} \\ \quad \quad \quad \swarrow \searrow \\ \quad \quad \quad 4 \quad 5 \\ \quad \quad \quad \textcircled{2^2} \end{array}$$
$$\begin{array}{l} 3 \quad \sqrt{27} = 3\sqrt{3} \\ \quad \quad \quad \swarrow \searrow \\ \quad \quad \quad 9 \quad 3 \\ \quad \quad \quad \textcircled{3^2} \end{array}$$