

$$(x + 5)(x + 7)$$

$$x^{2} + 7x + 5x + 35$$

$$x^{2} + 12x + 35$$

X(7x-4)

7x2-4x

$$\begin{array}{c|c}
(3b-4)(b+2) \\
3b^2+6b-4b-8 \\
\hline
3b^2+2b-8
\end{array}$$

(5a + 2)(a + 4)

| 5a² + 22a + 8 |

5a2 + 20a + 2a + 8

$$x^{2}-4x-12$$
 $(x-6)(x+2)$

$$\begin{array}{c|c} & & & & \\ x^2 - 4x - 12 & & & \\ \hline (5x - 6)^2 & & \\ \hline (5x - 6)$$

$$(5x-6)(5x-6)$$

$$25x^2-30x-30x+36$$

$$25x^2-60x+36$$

$$\begin{array}{c}
4(x^{2}+5x-4) \\
 \hline
W=x^{2}+5x-4
\end{array}$$

$$\begin{array}{c}
-3x^{2}+6x+9 \\
-3(x^{2}-2x-3) \\
-3(x-3)(x+1)
\end{array}$$

$$\begin{array}{c}
2x^{2}+8x+3x+12 \\
(2x^{2}+8x)+(3x+12) \\
2x(x+4)+3(x+4)
\end{array}$$

$$\begin{array}{c}
(x+4)(2x+3)
\end{array}$$

4x2 +20x - 16

$$25 + 70x + 49x^{2}$$

$$49x^{2} + 70x + 25$$

$$3x^{2} + 6x + 4x + 8$$

$$(3x^{2} + 6x) + (4x + 8)$$

$$3x(x + 2) + 4(x + 2)$$

$$1(x+2)(3x+4)$$

(2+7x)(2-7x)

1-49x2+4T

4-14x+14x-49x2

5x(x+2) + 2(x+2)(x+2)(5x+2)2x2-3x-4x+6 $2x^2 - 4x - 3x + 6$ $(2x^2-4x)+(-3x+6)$ 2x(x-2)-3(x-2) $\left(x-2)(2x-3)\right)$ 3x2+6x-x-2 $(3x^2+6x)-1(x+2)$ 3x(x+2)-1(x+2)

$$\begin{array}{c}
(2x^{3} + 10x^{2}) + (3x + 15) \\
2x^{2}(x + 5) + 3(x + 5)
\end{array}$$

$$\begin{array}{c}
3x + 6x + 9x + 8 \\
3x(x + 2) + 4(x)
\end{array}$$

$$\begin{array}{c}
(2x^{2} + 3)(x + 5)
\end{array}$$

$$\begin{array}{c}
2x^{2} - 3x - 9 \\
0 \cdot b = -18 \\
0 \cdot b = -18
\end{array}$$

$$\begin{array}{c}
0 \cdot b = -18 \\
0 \cdot b = -3 \\
-6 \cdot 3 = -18
\end{array}$$

$$\begin{array}{c}
-6 \cdot 3 = -18 \\
-6 \cdot 3 = -3
\end{array}$$

$$\begin{array}{c}
(2x^{2} - 6x) + (3x - 9)
\end{array}$$

$$\begin{array}{c}
2x(2x + 3) + 5(2x + 3)
\end{array}$$

(2x +5)(2x +3)

2x3 + 10x2 + 3x + 15

$$3x(x+2)+4(x+2)$$

$$(3x+4)(x+2)$$

$$2x^{2}-3x-9$$

$$0 \cdot b = -18$$

$$0+b = -3$$

$$-6.3 = -18$$

2x(x-3)+3(x-3)

 $\left(2x+3\right)\left(x-3\right)$

3x2 + 10x + 8

3x2+6x+4x+8

$$3x^{2}-2x-5$$

$$a \cdot b = 3 \cdot -5 = -15$$

$$0 \cdot b = 6 \cdot 6 = 36$$

$$0 \cdot b = 6 \cdot 6 = 36$$

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$$0 \cdot b = 6 \cdot 6 = 36$$

$$0 \cdot b = 6 \cdot 6 = 36$$

$$0 \cdot 4 \cdot b = -13$$

$$3x^{2} + 3x + 5 + 6$$

$$(6x^{2} - 9x) + (-4x + 6)$$

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

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

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

$$2x^{2} + 6x + x + 3$$

$$0 \cdot b = 6 \cdot 6 = 36$$

$$0 \cdot 4 \cdot b = -13$$

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

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

$$2x^{2} + 6x + x + 3$$

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

$$6 \cdot 1 = 6$$

$$6 \cdot 1 = 6$$

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

$$6 \cdot 1 = 7$$

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

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

$$-3x^{2} + 17x - 20$$

$$0 \cdot b = -3 \cdot -20 = 60$$

$$0 + b = 17$$

$$12 \cdot 5 = 60$$

$$12 + 5 = 17$$

$$-3x^{2} + 12x + 5x - 20$$

$$(-3x^{2} + 12x) + (5x - 20)$$

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

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

$$(-3x + 6)(6x^{2} - 9x - 4x + 6)(6x^{2} - 9x) + (-4x + 6)(6x^{2} - 9x) + (-4x + 6)(6x^{2} - 9x) + (-4x + 6)(3x - 2)(2x - 3)$$

$$-9 - 4 = 36$$

$$-9 - 4 = 36$$

$$-9 - 4 = 36$$

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

-9 - 4 = -13

a + b = -15-16 • 1 = -16 -16 + 1 = -15 $-8x^2-16x+x+2$ $(-8x^2-16x)+(x+2)$ -8x(x+2)+1(x+2) $\left(-8x+1\right)\left(x+2\right)$

 $-8x^2 - 15x + 2$

a, b = -8.2 = -16

$$(x+2)(x-2) = x^{2} - 2x + 2x - 4$$

$$x^{2} - 3$$

$$x^{2} - 36$$

$$(x+6)(x-6)$$

$$x^{2} - 1$$

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

$$= (2x)^{2} - (3)^{2}$$

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

$$10(64-x^{2})$$

$$10(8+x)(8-x)$$

$$(x+6)(x-6)$$

$$3x^{2} - 147$$

$$3(x^{2} - 49)$$

$$25x^{2} - 16$$

$$25x^{2} - 16$$

$$25x^{2} - 16$$

x2-16

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

$$X^{2} + 8x + 16$$

$$X^{2} = (x)^{2} \quad 16 = (4)^{2} \quad 8$$
First and Last both perfect two times the product of the numbers that are squared.

Both conditions met, means that this is a perfect square trinomfal.

$$X^{2} + 8x + 16 = (x)^{2} + 2(x)(4) + (4)^{2} = (x + 4)^{2}$$

$$(x + 4)^{2} = (x + 4)(x + 4)$$

$$x^{2} + 4x + 4x + 16$$

$$x^{2} + 8x + 16$$

 $4\chi^2 = (2\chi) = Q$

 $25 = (-5)^2 = 6$

-20 = (2)(2x)(5)

 $a=2x,b=-5/(2x-5)^2$

x2-6x+9

 $\left| \left(X-3 \right) \left(X-3 \right)^2 \right| \propto \left(X-3 \right)^2$

 $4x^2 + 12x + 9 = (2x)^2 + 2(2x)(3) + (3)^2$

 $=\left|\left(2x+3\right)^{2}\right|$

$$25 = (5)^{2}$$

$$30x = 2(3x)(5)$$

$$3x + 5^{2}$$

 $Q\chi^2 = (3\chi)^2$

 $\chi^2 + 6\chi + 9$

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

$$\frac{2(3x)(5)}{5)^{2}}$$

$$\frac{4x^{2}-20x+25}{5}$$

25x2 + 20x + 4

 $\chi^{2} + 5\chi + c = (\chi + d)^{2}$

X2+2xd+d2

 $= x^{2} + 2dx + d^{2}$

 $C = \left(\frac{5}{2}\right)^2 = \frac{25}{4}$

 $(=\sqrt{2})^2$

 $15x^2 = (5x)^2$

X2+6x+9

$$\begin{aligned}
& 4x^{2} = (2x)^{2} & (2x+3)(2x-3) \\
& 9 = (3)^{2} & (2x+3)^{2} & (2x+3) \\
& (2x+3)^{2} & (2x+3) & (2x+3)^{2} & (2x+3)(2x+3) & (2x+3)(2x-3) & (2x+3)(2x-3)(2x-3) & (2x+3)(2x-2)(2x-2) & (2x+3)$$

4x2-9

$$\chi^{2} = (x)^{2}$$
 $|6\chi = 2(8)(x)|$
 $(8 + \chi)^{2}$

 $2(-8+x)^2$

4x2+12x+9

$$9x^{2} = (3x)^{2}$$

$$1 = (1)^{2}$$

$$6 = 2(3x)(1)$$

$$0 = 3x, b = 1$$

$$0 = 3x + 1$$

2(x-10)(x-10)

 $2.(x^2-20x+100)$

2x2-40x+200

 $9x^{2} + 6x + 1$

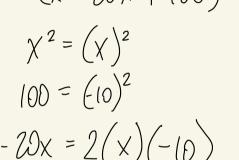
$$9x^{2}+6x+1$$

$$2x^{2}-40x+200$$

$$2(x^{2}-20x+100)$$

(3x+1)(3x+1)

9x2+3x+3x+1



$$-20x = 2(x)(-10)$$

$$0 = x, b = -10$$

$$2(x - 10)^{2}$$

$$2(x^{2}-10x-10x+100) = (x^{2}-10)$$

$$2(x^{2}-20x+100) = (x^{2}-10)$$

$$2(x^{2}-40x+100) = (x^{2}-10)$$

$$2(x^{2}-40x+100) = (x^{2}-10)$$

$$100 - 140x + 49x^2$$

 $100 = (10)^2$

$$49x^{2} = (-7x)^{2}$$

$$-140 = 2(10)(-7x)$$

$$0 = 2(10)(-7x)$$

$$0 = 2(10)(-7x)$$

$$0 = 7x$$

$$0 = 7x$$

(10-7x)(10-7x)

100-70x-70x+49x2

100 - 140x + 49x2

(10-7x)(19-7x)

$$\frac{100 - 140x + 49x^2}{100 - 140x + 49x^2}$$

$$\begin{vmatrix} |00 - |40x + 49x^{2}| \\ |00 - |40x + 49x^{2}| \\ |00 - |40x + 49x^{2}| \\ |40x^{2} - |40x + 49x^{2}| \end{vmatrix}$$

$$-140 = 2(10)(-7x)$$

$$0 = (0, b = -7x)$$

$$a = (0, b = -7x)^2$$

$$3x^{2}-20x-7$$

$$a \cdot b = 3 \cdot -7 = -21$$

$$a + b = -20$$

$$-21 \cdot 1 = -21$$

$$-21 + 1 = -20$$

$$3x^{2}-21x+x-7$$

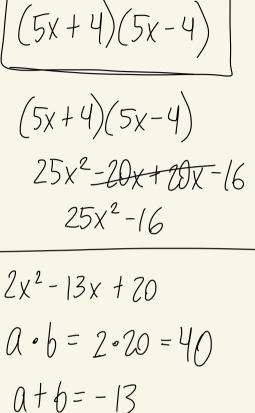
$$(3x^{2}-21x)+(x-7)$$

$$3x(x-7)+1(x-7)$$

$$(3x+1)(x-7)$$

$$3x^{2}-21x+x-7$$

$$3x^{2}-20x-7$$



-8.-5= 40

-8-5=-13

25x²-16

$$2x^{2}-8x-5x+20 \qquad (2x-5)(x-4)$$

$$(2x^{2}-8x)+(-5x+20) \qquad 2x^{2}-8x-5x+20$$

$$2x(x-4)-5(x-4) \qquad 64x^{2}-144x+81$$

$$(2x-5)(x-4) \qquad 64x^{2}=(8x)^{2}$$

$$81=(9)^{2}$$

$$-144=2(8x)(9)$$

$$64x^{2}-72x-72x+81$$

$$64x^{2}-144x+81$$

$$9=8x, b=-9$$

$$12x^{2}-8x-5x+20$$

$$13x+20$$

$$14x^{2}-144x+81$$

$$14x^{2}-144x+81$$

$$14x^{2}-4x-48$$

$$3(x^{2} + 10x + 25)$$

$$x^{2} = (x)^{2}$$

$$25 = (5)^{2}$$

$$(0x = 2(x)(5)$$

$$3(x + 5)^{2}$$

$$3(x + 5)^{2}$$

 $3x^2 + 30x + 75$

$$7(x+3)(x-3)$$

$$2x^{2} + 7x + 3$$

$$0 \cdot b = 2 \cdot 3 = 6$$

$$0 + b = 7$$

$$6 \cdot 1 = 6$$

$$6 + 1 = 7$$

$$2x^{2} + 6x + (x+3)$$

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

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

7/2-63

 $7(\chi^2-9)$

$$2(x^{2} + 4x - 16)$$

$$2(x^{2} + 2x - 8)$$

$$3(x^{2} - 60x)$$

$$2(x + 4)(x - 2)$$

$$3(x^{2} - 60x)$$

$$3(x^{2} - 20x)$$

$$-20x = 2(x)$$

$$3(x - 10)^{2}$$

$$2(x + 2x - 8)$$

$$3(x^{2} - 60x)$$

$$3(x - 10)^{2}$$

$$3(x - 10)^{2}$$

$$2(x + 4)(x - 2)$$

$$3(x^{2} - 60x)$$

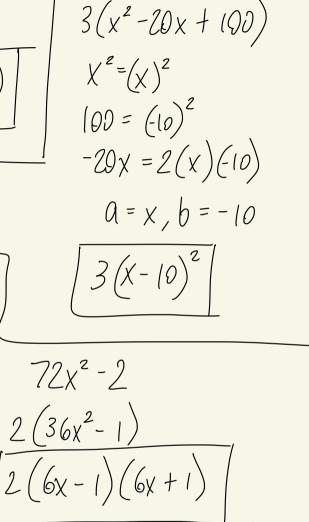
$$3(x - 10)^{2}$$

$$3(x - 10)^{2}$$

$$2(36x^{2} - 1)$$

$$3(x - 10)^{2}$$

$$2(36x^{2} - 1)$$



3x2-60x + 300

$$\frac{5(x^{2}+x+3)}{6-18x+x^{2}} = -64$$

$$\frac{6+6}{6-18x+x^{2}} = -12$$

$$\frac{6+6}{6-14x-4x+x^{2}} = -16\cdot 4 = -12$$

$$\frac{8x^{2}-16x+4x-8}{8x(x-2)+4(x-2)}$$

$$\frac{8x^{2}-16x+4x-8}{8x(x-2)+4(x-2)}$$

$$\frac{8x+4}{(x-2)}$$

$$\frac{8x+4}{(x-2)}$$

$$\frac{14(x-2)}{(x-2)}$$

$$\frac{14(x-x)-x(x-x)}{(x-2)}$$

$$\frac{3x^{2}+27}{(x-2)}$$

$$\frac{3x^{2}+27}{(x-2)}$$

 $5x^2 + 5x + 15$

8x2-12x-8

640 - 10x2

8x2-18x-5

(2+x)(2-x)

4-2x+2x-X

 $\frac{10x^2+50x}{10x(x+5)}$