Warm Up Questions

1. $x^2 - 1x - 56$

2. $2p^2 - 10p + 12$

3. $6x^2 + 5x - 6$

4. $20b^2 + 7b - 3$

Trinomials

Trinomials Day #1

Factor each completely.

1) $x^2 - 3x - 54$

$(x-9)(x+6)$ $-9 \times 6 = -54$
$-9 + 6 = -3.$

2) $n^2 - n - 12$

$(n-4)(n+3)$ $-4 \times 3 = -12$
$-4 + 3 = -1$

3) $b^2 + 18b + 81$

$(b+9)(b+9)$ $9 \times 9 = 81$
$9 + 9 = 18$
$= (b+9)^2$

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

$(x-1)(x-3)$ $-1 \times -3 = 3$
$-1 + -3 = -4$

5) $5n^2 - 65n + 180$

6) $4n^2 + 32n - 36$

5) $5n^2 - 65n + 180$

$5(n^2 - 13 + 36)$

$5(n-9)(n-4)$

$\begin{array}{l} -9 \times -4 = 36 \\ -9 + -4 = -13 \end{array}$

6) $4n^2 + 32n - 36$

$4(n^2 + 8n - 9)$

$4(n+9)(n-1)$

$\begin{array}{l} 9 \times -1 = -9 \\ 9 + -1 = 8 \end{array}$

Diff

$\begin{array}{l} -9 \times 20 = -180 \\ -9 + 20 = 11 \end{array}$

Big

7) $9m^2 - 82m + 80$

$\left(\dfrac{9m}{9} - \dfrac{10}{9}\right)\left(\dfrac{9m}{9} - \dfrac{72}{9}\right)$

$\left(m - \dfrac{10}{9}\right)(m - 8)$

$(9m - 10)(m - 8)$

$\begin{array}{l} -10 \times -72 = +720 \\ -10 + -72 = -82 \end{array}$

-1×-720
-2×-360
-3×-240
-4×-180
-6×-120
$-8 \times +90$
-10×-72

8) $6v^2 + 11v - 30$

$\left(\dfrac{6}{6}v - \dfrac{9}{6}\right)\left(\dfrac{6}{6}v + \dfrac{20}{6}\right) \div 2$

$(v - \dfrac{3}{})(v + 10)$

$(2v - 3)(3v + 10)$

$\begin{array}{l} -1 \times 180 \\ -2 \times 90 \\ -3 \times 60 \\ -4 \times 45 \\ -5 \times 36 \\ -6 \times 30 \\ -9 \times 20 \end{array}$

1. $x^2 - 1x - 56$

$-8 \times 7 = \ominus 56$ ↗ D:FF

$(x-8)(x+7)$

$-8 + 7 = \ominus 1$

Big $\ominus$

2. $2p^2 - 10p + 12$

$$2(p^2 - 5p + 6)$$

$$= 2(p-2)(p-3)$$

Same

$-2 \times 3 = \oplus 6$

$-2 + 3 = \ominus 5$

Both $\ominus$

3. $6x + 5x - 6$

Diff

$-4 \times 9 = \ominus 36$

$-4 + 9 = \oplus 5$

→ Big ⊕

$-1 \times +36$

-2×18

-3×12

$\boxed{-4 \times 9}$

$\left(\dfrac{6}{6}x - \dfrac{4 \div 2}{6 \div 2}\right)\left(\dfrac{6}{6}x + \dfrac{9 \div 3}{6 \div 3}\right)$

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

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

4. $20b^2 + 7b - 3$

Clinger

Diff

$\_\_x\_\_ = \ominus 60$

$\_\_ + \_\_ = \oplus 7$

Big $\oplus$

$\left(\dfrac{20b - 5}{20}\right)\left(\dfrac{20b + 12}{20} \div 4\right)$

-1×-60
-2×30
-3×20
-4×15
$\boxed{-5 \times 12}$

$\left(b - \dfrac{1}{4}\right)\left(b + \dfrac{3}{5}\right)$

$= (4b - 1)(5b + 3)$