

Factor each into two binomials.

5. $9k^2 - 6k - 8$

6. $w^2 - 19w + 84$

5. $9k^2 - 6k - 8 = (3k - 4)(3k + 2)$

Handwritten work for problem 5:

Diagram showing the cross-multiplication method for factoring $9k^2 - 6k - 8$:

Top row: -72 and -12

Bottom row: $+6$ and -6

Diagram showing the factored form $(3k - 4)(3k + 2)$ with a box containing the terms:

$9k^2$	$-12k$
$6k$	-8

6. $w^2 - 19w + 84 = (w - 12)(w - 7)$

Handwritten work for problem 6:

Diagram showing the cross-multiplication method for factoring $w^2 - 19w + 84$:

Top row: 84 and -7

Bottom row: -12 and -19

Diagram showing the factored form $(w - 12)(w - 7)$ with a box containing the terms:

w^2	$-12w$
$-7w$	$+84$

Factoring out GCF first.

You should always look for a GCF before you do any other kind of factoring!

Factor completely.

$$\frac{6k^2}{6} - \frac{18k}{6} - \frac{324}{6}$$

$$6(k^2 - 3k - 54)$$

$$\begin{array}{c} -54 \\ \swarrow \quad \searrow \\ +6 \quad -9 \\ \swarrow \quad \searrow \\ -3 \end{array}$$

$$6(k+6)(k-9)$$

Factor completely.

$$15x^2 + 35x - 30 = 5(x+3)(3x-2)$$

$$5(3x^2 + 7x - 6)$$

$$\begin{array}{c} -18 \\ \swarrow \quad \searrow \\ +3 \quad -2 \\ \swarrow \quad \searrow \\ +7 \end{array}$$

	x	$+3$
$3x$	$3x^2$	$+9x$
-2	$-2x$	-6

Factor each completely.

a. $(16x^2 - 64x + 28)$

$$4(4x^2 - 16x + 7)$$

$$4(2x-1)(2x-7)$$

$$\begin{array}{c} 28 \\ \swarrow \quad \searrow \\ -14 \quad -2 \\ \swarrow \quad \searrow \\ -16 \end{array}$$

$2x$	$4x^2$	$-14x$
-1	$-2x$	$+7$

You can now finish Hwk #20

Sec 9-6

Pages 487-488

Problems 6, 12, 14, 15, 18, 19, 23, 24, 36

Given $(b + 10)(b - 10) = b^2 - 100$

Expanding Jeopardy:

$$g^2 - 9 = (g+3)(g-3)$$

Factoring Difference of Perfect Squares

subtraction

- 4
- 9
- 16
- 25
- 36
- 49
- 64
- 81
- 100

Factor each.

$$g^2 - 81 = (g+9)(g-9) \Rightarrow (g \pm 9)$$

$$b^2 - 64 = (b+8)(b-8) \Rightarrow (b \pm 8)$$

Factor:

$$\sqrt{a^2 - 289} = (a+17)(a-17) = 17$$

Factor:

$$\sqrt{16m^2 - 441}$$

$4m \quad 21$

$$4m \pm 21$$

Factor

$$36a^2 - 24$$

$$= 12(3a^2 - 2)$$

taking out the GCF is the only factoring that you can do in this problem. That is why you should always look for the GCF first.

Factor this trinomial:

$$x^2 + 10x + 24$$

GCF - NONE

$$\begin{array}{c} 24 \\ +6 \quad +4 \\ 10 \end{array}$$

$$(x+6)(x+4)$$

You can skip the box because $a=1$