Do Now: Factor each completely

1) $25g^4 - 15g^3 + 5g$

$$5g(5g^3 - 3g^2 + 1)$$

2) $x^2 - 16d^2$

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

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

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

Oct 31-2:26 PM

HomeWork Answers

1. $(4b - 2)(4b + 2)$ ~~crossed out~~
   DOTS $4(4b^2 + 1)$

2. $(x - 6)(x + 6)$
   DOTS

3. $(x^2 + 5)(x + 3)$
   Grouping

4. $3r^2(2s - x^2)$ ~~crossed out~~
   GCF $3rs(2r - sx^2)$

5. $(x^2 - 5)(x + 13)$
   Grouping

6. $(3x^2 - 2)(3x + 2)(9x^2 + 4)$
   $(9x^2 - 4)(9x^2 + 4)$
   DOTS (TWICE)

4) $6r^2s - 3rsx^2$

Mar 3-11:34 AM

Factoring Trinomials

TRINOMIAL FACTORING

A trinomial has 3 terms that are separated by addition or subtraction signs.

Standard form: $ax^2 + bx + c$, where a, b, and c are real numbers.

Oct 31-2:30 PM

Factoring Trinomials:

In general: If the coefficient of x^2 is 1, then
$$x^2 + bx + c = (x + m)(x + n)$$

where m and n multiply to give c and

m and n add to give b.

Oct 31-2:33 PM

Factor the following trinomials.

1. $a^2 + 10a + 16$

$(a + 2)(a + 8)$

$$\begin{array}{c|c} C = 16 & B = 10 \\ \hline 1 \cdot 16 & 1 + 16 = \\ 2 \cdot 8 & \boxed{2 + 8 = 10} \\ 4 \cdot 4 & 4 + 4 \end{array}$$

2. $t^2 - 3t - 10$

$(t + 2)(t - 5)$

$$\begin{array}{c|c} C = -10 & B = -3 \\ \hline 2 \cdot -5 & 2 + -5 = -3 \end{array}$$

Factor the following trinomials.

3. $t^2 - 18t + 81$

$(t - 9)(t - 9)$

OR

$(t - 9)^2$ Binomial Square

$$\begin{array}{c|c} C = 81 & B = -18 \\ \hline -9 \cdot -9 & -9 + -9 = 18 \end{array}$$

4. $x^2 - 7x + 6$

$(x - 6)(x - 1)$

$$\begin{array}{c|c} C = 6 & B = -7 \\ \hline -6 \cdot -1 & -6 + (-1) = \rightarrow \end{array}$$

Factor the following trinomials.

5. $w^2 + 2w - 8$

$(w + 4)(w - 2)$

$C = -8 \quad B = 2$

$-2 \cdot 4$

6. $w^2 - 12w + 20$

$(w - 10)(w - 2)$

Oct 31-4:21 PM

Factor the following trinomials.

7. $x^4 + 7x^2 - 8$

$(x^2 - 1)(x^2 + 8)$

$(x + 1)(x - 1)(x^2 + 8)$

$C = -8 \quad B = 7$

$-1 \cdot 8 \quad -1 + 8 = 7$

8. $x^4 + x^2 - 20$

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

Mar 6-9:57 AM

4