

Do Now: Factor

1) $5x^4 - 10x^2$

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

2) $4y^3 - 10y^2 + 16y$

$$2y(2y^2 - 5y + 8)$$

3) $(3a^4 + 3a^3 - 4a - 4)$

$$3a^3(a+1) - 4(a+1)$$

$$(a+1)(3a^3 - 4)$$

① GCF

② Factoring
by Grouping

Nov 9-10:04 AM

HW Answers

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

12) $(4n + 3)(n^2 + 1)$

13) $(5d - 3)(2d + 7)$

14) $(4n - 5)(3n^2 - 2)$

15) $(b - 3)(5b^3 - 1)$

16) $(t^2 - 2)(t - 5)$

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5) C

6) J

7) C

8) F

Mar 11-8:08 AM

What is a perfect square?

Perfect square: the product of a rational number times itself (Has a "nice" square root)

How can you take the square root of an even exponent?

$$\sqrt{x^2} = x \quad \sqrt{b^6} = b^3$$

To take the square root you divide the exponent by 2

$$\sqrt{y^4} = y^2$$

Some perfect squares you should know:

$\sqrt{1} = 1$	$\sqrt{4} = 2$
$\sqrt{9} = 3$	$\sqrt{16} = 4$
$\sqrt{25} = 5$	$\sqrt{36} = 6$
$\sqrt{49} = 7$	$\sqrt{64} = 8$
$\sqrt{81} = 9$	$\sqrt{100} = 10$
$\sqrt{121} = 11$	$\sqrt{144} = 12$

Oct 31-6:58 AM

An expression in the form $a^2 - b^2$ is called the **Difference Of Two perfect Squares (DOTS)**

RULE: $\sqrt{a^2} - \sqrt{b^2} = (a + b)(a - b)$

EX 1: $\sqrt{r^2} - \sqrt{1}$
 $(r + 1)(r - 1)$

EX 2: $\sqrt{x^4} - \sqrt{100}$

$(x^2 - 10)(x^2 + 10)$

EX 3: $\sqrt{16y^2} - \sqrt{49}$
 $(4y + 7)(4y - 7)$

EX 4: $\sqrt{4y^2} - \sqrt{25}$

$(2y - 5)(2y + 5)$

Nov 20-6:43 AM

Let's try some examples:

1. $y^2 - 100$

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

4. $9 - 16r^2$

$$(3+4r)(3-4r)$$

2. $144 - c^2$ $(c+12)(-c+12)$

$$(12+c)(12-c)$$

5. $100x^2 - 81y^2$

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

3. $25m^2 - n^2$

$$(5m+n)(5m-n)$$

6. $9c^4 - 25$

$$(3c^2+5)(3c^2-5)$$

Nov 9-2:30 PM