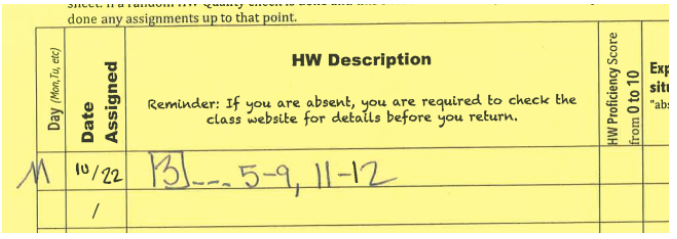
Pick up Warm Up


done any assignments up to that point.

Day (Mon, Tu, etc)	Date Assigned	HW Description	HW Proficiency Score from 0 to 10	Exp sit "ab
M	10/22	B1 --- 5-9, 11-12		
	/			

Reminder: If you are absent, you are required to check the class website for details before you return.

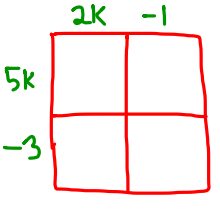
While you work, let me know if there are HW questions you want me to go over.

Area models can help rewrite expressions that involve multiplication?

The area model at right relates the expressions $(2x - 3)(3x + 1)$ and $6x^2 - 7x - 3$.

	$2x$	-3
$+1$		
$3x$	$6x^2$	$-9x$

a) Use an area model to find an expression equivalent to $(5k - 3)(2k - 1)$



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a) Use an area model to find an expression equivalent to $(5k - 3)(2k - 1)$

$10k^2 - 11k + 3$

	$2k$	-1
$5k$	$10k^2$	$-5k$
-3	$-6k$	3

b) Use an area model to help you multiply $(p^2+3p+9)(2p-1)$

	$2p$	-1
p^2		
$3p$		
9		

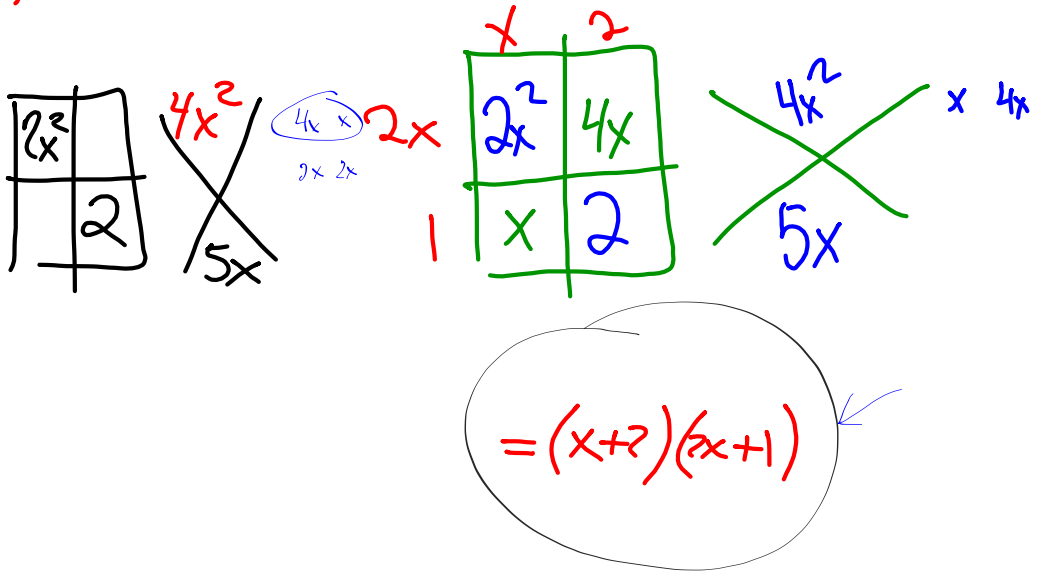
	$2p$	-1
p^2	$2p^3$	$-p^2$
$3p$	$6p^2$	$-3p$
9	$18p$	-9

$2p^3 + 5p^2 + 15p - 9$

c) Write the last problem as a product being equal to the sum

$(p^2+3p+9)(2p-1) = 2p^3+5p^2+15p-9$

d) Write $2x^2+5x+2$ as a product (in other words.... factor it!)



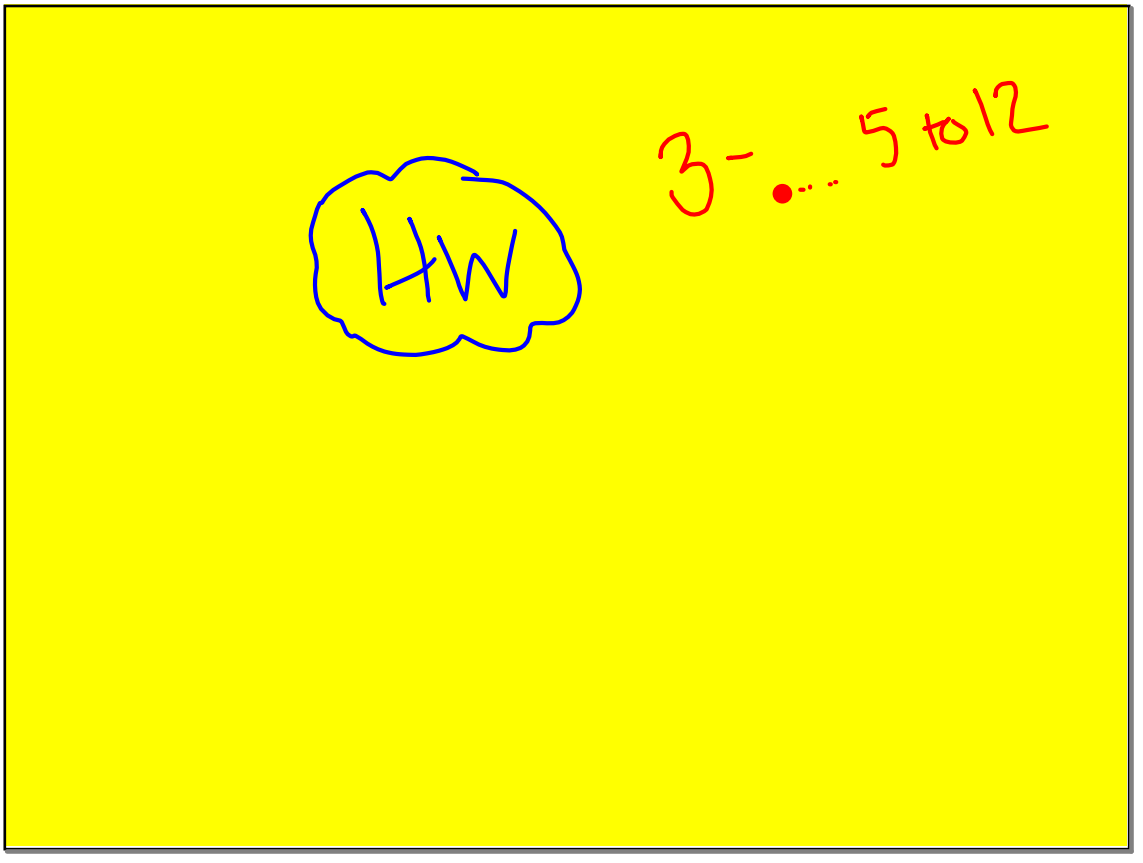
FACTORING QUADRATICS
that are
Differences of Perfect Squares

$w^2 - 81 = \boxed{w}^2 - \boxed{9}^2 = (w+9)(w-9)$

$x^2 - 16y^2 = \boxed{x}^2 - \boxed{4y}^2 = (x+4y)(x-4y)$

$4m^2 - 1 = \boxed{2m}^2 - \boxed{1}^2 = (2m+1)(2m-1)$

$4a^2 + 9b^2 =$ can't be factored



yesterday

$2x + 5y = 1$ $\quad 3x - 7y = 2$

$+7y \quad +7y$

$2\left(\frac{2+7y}{3}\right) + 5y = 1$

$2(2+7y) + 15y = 3$

$4 + 14y + 15y = 3$

$3x = 2 + 7y$

divide by 3

$x = \frac{2+7y}{3}$

$x = \frac{17}{29}$

$y = \frac{-1}{29}$

12a $\quad 25^{-\frac{1}{2}} = \frac{1}{25^{\frac{1}{2}}} = \frac{1}{\sqrt{25}}$

$= \frac{1}{5}$

7

$\left(\frac{2x^5y^4}{4xy^3}\right)^3$

Bonnie

$\frac{8x^{15}y^{12}}{512x^3y^9}$

$(x^5)^3$

Dylan

$\left(\frac{x^4y}{4}\right)^3$

$\frac{x^{12}y^3}{64}$

5 a $(2x-3)^2+5$

$(2x-3)(2x-3)+5$

$4x^2-6x-6x+9+5$

5 $\left(\frac{3x^2y}{x^3}\right)^4$

6

a) $\sqrt{4x^2y^4}$

b) $\sqrt{8x^2y}$

c) $\sqrt{4x^2y}$

d) $\sqrt{16xy^2}$

e) $\sqrt{8xy^2}$

8 Describe the graph given the equation

a) $y = 3$

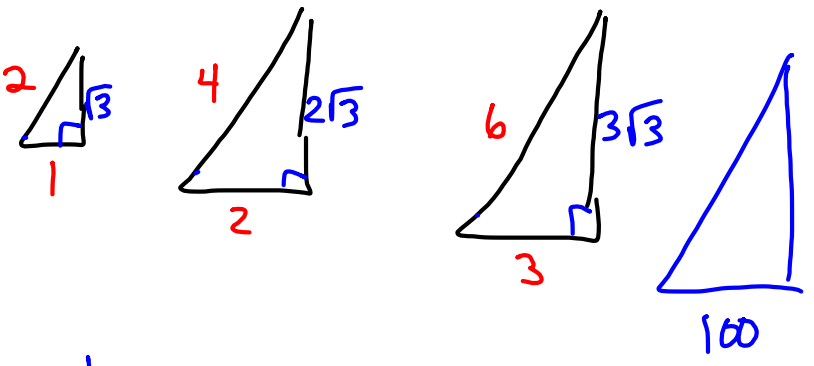
b) $x = -2$

c) Where do the graphs cross

9 $342 = 23m + b$

$147 = 10m + b$

10



The long leg is...

The hypotenuse is....

11 3, 9, ...

(a) Arith

(b) Geom

(c) Neither

12 (a) $25^{-\frac{1}{2}} =$

(b) $\left(\frac{1}{27}\right)^{-\frac{1}{3}} =$

(c) $9^{3/2} =$

(d) $16^{-3/4} =$

Continuing with

EQUIVALENT EXPRESSIONS

today's goal...

What are other ways to find equivalent expressions?

textbook 3-17 b and c

For each, make ~~two~~ one equivalent statements

(a)

	x	3
x	x^2	$3x$
8	$8x$	24

$(x+3)(x+8) = x^2+11x+24$

For each, make two equivalent statements

(a)

x^2	
$8x$	

3

(b)

$5x$	$10x^2$	$-20xy$	$25x$
-3	$-6x$	$12y$	-15
	$2x$	$-4y$	5

$(5x-3)(2x-4y+5) = -20xy + 10x^2 + 19x + 12y - 15$

$10x^2 + 19x - 20xy + 12y - 15$

The U substitution trick

Solve the system $2x + y^7 = 6$, $3x - 2y^7 = -5$

Substitute $U \to y^7$

$2x + U = 6$

$3x - 2U = -5$

$2 \cdot (2x + U = 6) \to 4x + 2U = 12$

$3x - 2U = -5$

$7x = 7$

$x = 1$

$2(1) + U = 6$

$U = 4$

Now $y^7 \to U$

looks like as system of linear equation

$y^7 = 4$

$\sqrt[7]{\quad} \quad \sqrt[7]{\quad}$

$y = \sqrt[7]{4}$

Solution

$x = 1$

$y = \sqrt[7]{4}$

$2x + y = 6$

$3x - 2y = -5$

$y = 6 - 2x$

$3x - 2(6 - 2x) = -5$

$3x - 12 + 4x = -5$

$7x - 12 = -5$

$7x = 7$

$x = 1$

Factor

$(a+7)^2 - 10(a+7) + 25$

Substitute **u** for $(a+7)$

$u^2 - 10u + 25$

$(u-5)(u-5)$

$(u-5)^2$

replace u with a+7

$(a+7-5)^2 \rightarrow (a+2)^2$

In order to re-write $y^4 - x^2$

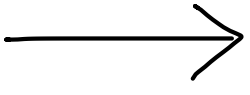
subtitute **u** for

Re-write $9x^2y^4 - z^6$

Substitute U for

and V for

B.B.



CIRCLES

$x^2 + y^2 = 16$ $(x+5)^2 + (y+3)^2 = 17$

$r = 4$ $r = \sqrt{17}$

center $(0, 0)$ center $(-5, -3)$

$x^2 - 6x + 10y + y^2 - 15 = 3$

$r = ?$

center ?

We need the help of a recent friend to convert to standard form

friend → Completing the Square

$x^2 - 6x + 10y + y^2 - 15 = 3$

$+15 \quad +15$

$x^2 - 6x + 9 \quad y^2 + 10y + 25 = 18 + 9 + 25$

$\left(\frac{-6}{2}\right)^2 = 9$

$\left(\frac{6}{2}\right)^2$

$(x-3)^2 + (y+5)^2 = 52$

$r = \sqrt{52}$ center $(3, -5)$

See your test

Assignment

3- 23ace , 25, 29c , 30, 31-32, 35