

Questions on 2.8 HW? 2.7  
HW is due today and we are  
quizzing.

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**Multiply the following binomials using the given two-way table to assist you.**

*Example:*  $(2x + 3)(5x - 7)$

$(2x + 3)$	$(5x - 7)$	
		$= 10x^2 + x - 21$
$10x^2$	$-14x$	
$+15x$	$-21$	

1.  $(3x - 4)(7x - 5) = 21x^2 - 413x + 20$

$3x$	$-4$	
$7x$	$-5$	
$21x^2$	$-28x$	
$-15x$	$20$	

2.  $(9x + 2)(x + 6)$


3.  $(4x - 3)(3x + 11)$


4.  $(7x + 3)(7x - 3)$


5.  $(3x - 10)(3x + 10)$


6.  $(11x + 5)(11x - 5)$


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14.  $y = \frac{1}{2}(x - 7)(x - 7)$       15.  $y = -\frac{1}{2}(x - 7)(x - 7)$

a. Vertex: (7, 0)      a. Vertex: \_\_\_\_\_

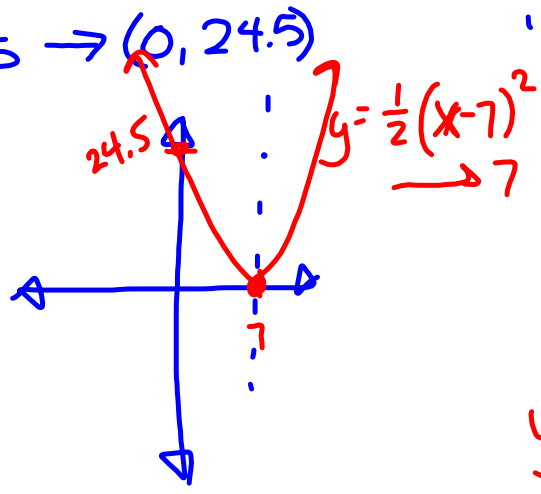
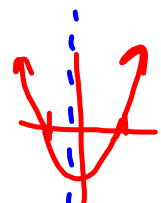
b. x-inter(s) (7, 0)      b. x-inter(s) \_\_\_\_\_

c. y-inter (0, 24.5)      c. y-inter: \_\_\_\_\_

d. Stretch  $\frac{1}{2}$       d. Stretch \_\_\_\_\_

x-intercepts:  
make  $y=0$ ,  
 $0 = \frac{1}{2}(x-7)(x-7)$   
 $x-7=0$   
 $x=7$   
If  $x=7$ ,  
 $y = \frac{1}{2}(7-7)(7-7)$   
 $y = \frac{1}{2}(0)(0)$   
 $y=0 \rightarrow (7,0)$

y-intercepts, make  $x=0$   
 $y = \frac{1}{2}(0-7)(0-7)$   
 $y = \frac{1}{2}(-7)(-7)$   
 $y = 24.5 \rightarrow (0, 24.5)$



Vertex:  $\frac{7+7}{2} =$   
 $\frac{14}{2} = 7$   
(7, 0)

$y = \frac{1}{2}(7-7)(7-7)$   
 $y = \frac{1}{2}(0)(0)$   
 $y = 0 \rightarrow (7, 0)$

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11.  $y = 4(x - 2)(x + 6)$   
 a. Vertex: \_\_\_\_\_  
 b. x-inter(s) \_\_\_\_\_  
 c. y-inter \_\_\_\_\_  
 d. Stretch \_\_\_\_\_

12.  $y = -3(x + 2)(x - 6)$   
 a. Vertex: \_\_\_\_\_  
 b. x-inter(s) \_\_\_\_\_  
 c. y-inter: \_\_\_\_\_  
 d. Stretch \_\_\_\_\_

13.  $y = (x + 5)(x + 7)$   
 a. Vertex: \_\_\_\_\_  
 b. x-inter(s)  $(-7, 0), (-5, 0)$   
 c. y-inter \_\_\_\_\_  
 d. Stretch \_\_\_\_\_

14.  $y = \frac{1}{2}(x - 7)(x - 7)$   
 a. Vertex: \_\_\_\_\_  
 b. x-inter(s) \_\_\_\_\_  
 c. y-inter \_\_\_\_\_

15.  $y = -\frac{1}{2}(x - 8)(x + 4)$   
 a. Vertex: \_\_\_\_\_  
 b. x-inter(s) \_\_\_\_\_  
 c. y-inter: \_\_\_\_\_

16.  $y = \frac{3}{5}(x - 25)(x - 9)$   
 a. Vertex: \_\_\_\_\_  
 b. x-inter(s) \_\_\_\_\_  
 c. y-inter \_\_\_\_\_

Handwritten notes for problem 13:  
 $y = (-7+5)(-7+7)$   
 $y = -2(0)$   
 $y = 0$   
 $y = (-5+5)(-5+7)$   
 $y = 0(2)$   
 $y = 0$

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23.  $y = 4(x + 2)^2 - 64$   
 a. Vertex:  $(2, -64)$   
 b. x-inter(s)  $(2, 0); (-6, 0)$   
 c. y-inter  $(0, -48)$   
 d. Stretch  $4$

24.  $y = -3(x - 2)^2 + 48$   
 a. Vertex: \_\_\_\_\_  
 b. x-inter(s) \_\_\_\_\_  
 c. y-inter: \_\_\_\_\_  
 d. Stretch \_\_\_\_\_

25.  $y = \dots$   
 a. Vertex: \_\_\_\_\_  
 b. x-inter(s) \_\_\_\_\_  
 c. y-inter: \_\_\_\_\_  
 d. Stretch \_\_\_\_\_

26. Did you notice that the parabolas in problems 11, 12, & 13 are the same as the parabolas in problems 23, 24, & 25 respectively? If you didn't, go back and compare the parabolas in problems 11, 12, & 13 and problems 23, 24, & 25.

y-intercepts, make  $x=0$ ,  
 $y = 4(0+2)^2 - 64$   
 $y = 4 \cdot 4 - 64$   
 $y = 16 - 64$   
 $y = -48$

~~$5 \cdot 64$~~   
 ~~$-16$~~   
 $48$

x-intercept,  $y=0$ :  
 $0 = 4(x+2)^2 - 64$   
 $+64$   $+64$

$$4 \sqrt{64}$$

$$64 = \frac{4(x+2)^2}{4}$$

$$\sqrt{16} = \sqrt{(x+2)^2}$$

$$\pm 4 = x + 2$$

$$\underline{-2} \quad \underline{-2}$$

$$-2 \pm 4 = x$$

$$(2, 0) \leftarrow 2 = -2 + 4 = x$$

$$(-6, 0) \leftarrow -6 = -2 - 4 = x$$

## Quadratics Quiz #4: Factoring Quadratics

Factor the following into the factors of  $c$  that add up to  $b$  in  $f(x)=ax^2+bx+c$

$$1) x^2 + 11x + 10 = (x \quad)(x \quad)$$

$$2) x^2 + 9x - 22 = (x \quad)(x \quad)$$

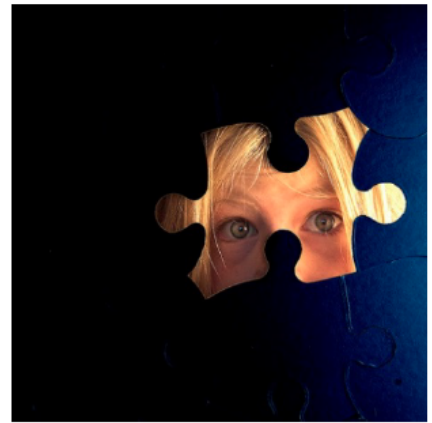
## 2.9 I've Got a Fill-in

*A Practice Understanding Task*

HW: PICK 4 problems from 2, 3, 4, 5, 6, 7 on pgs 53-56

\* SKIP PGS. 57-59 \*

For each problem below, you are given a piece of information that tells you a lot. Use what you know about that information to fill in the rest.



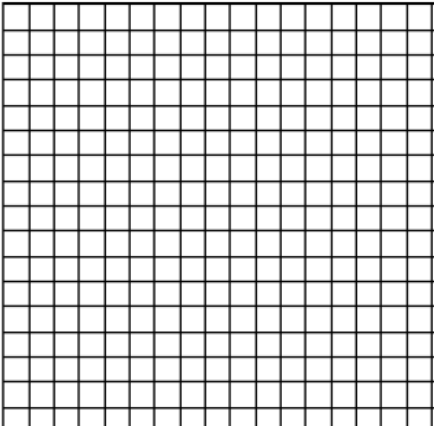
<p>1. You get this:</p> <p style="text-align: center;"><math>y = x^2 - x - 12</math></p> <p style="text-align: center;"><math>b = -1 \quad c = -12</math></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">• -12</td> <td style="padding: 5px;">Sum</td> </tr> <tr> <td style="padding: 5px;">-6, 2</td> <td style="padding: 5px;">-6 + 2 = -4</td> </tr> <tr> <td style="padding: 5px;">6, -2</td> <td style="padding: 5px;">6 + -2 = 4</td> </tr> <tr> <td style="padding: 5px;">-3, 4</td> <td style="padding: 5px;">-3 + 4 = 1</td> </tr> <tr> <td style="padding: 5px; border: 2px solid red;">3, -4</td> <td style="padding: 5px; border: 2px solid red;">3 + -4 = -1</td> </tr> <tr> <td style="padding: 5px;">-1, 12</td> <td style="padding: 5px;">-1 + 12 = 11</td> </tr> <tr> <td style="padding: 5px;">1, -12</td> <td style="padding: 5px;">1 + -12 = -11</td> </tr> </table> <p style="margin-left: 20px;">             If <math>x = -3</math>,  <math>y = (-3+3)(-3-4)</math>  <math>y = 0(-7)</math>  <math>y = 0</math> </p> <p style="margin-left: 20px;">             If <math>x = 4</math>,  <math>y = (4+3)(4-4)</math>  <math>y = 7(0)</math>  <math>y = 0</math> </p> <p>vertex: <math>(\frac{1}{2})</math></p>	• -12	Sum	-6, 2	-6 + 2 = -4	6, -2	6 + -2 = 4	-3, 4	-3 + 4 = 1	3, -4	3 + -4 = -1	-1, 12	-1 + 12 = 11	1, -12	1 + -12 = -11	<p>Fill in this:</p> <p>Factored form on the equation:</p> <p style="text-align: center;"><math>(x+3)(x-4)</math></p> <p style="text-align: center;"><math>0 = (x+3)(x-4)</math></p> <p style="text-align: center;"><math>x = -3, 4 \rightarrow (-3, 0), (4, 0)</math></p> <p>Graph of the equation:</p> <p style="margin-left: 20px;">by ds →</p>
• -12	Sum														
-6, 2	-6 + 2 = -4														
6, -2	6 + -2 = 4														
-3, 4	-3 + 4 = 1														
3, -4	3 + -4 = -1														
-1, 12	-1 + 12 = 11														
1, -12	1 + -12 = -11														

$$x = \frac{-3+4}{2} = \frac{1}{2}$$


$$y = (\frac{1}{2} + 3)(\frac{1}{2} - 4)$$

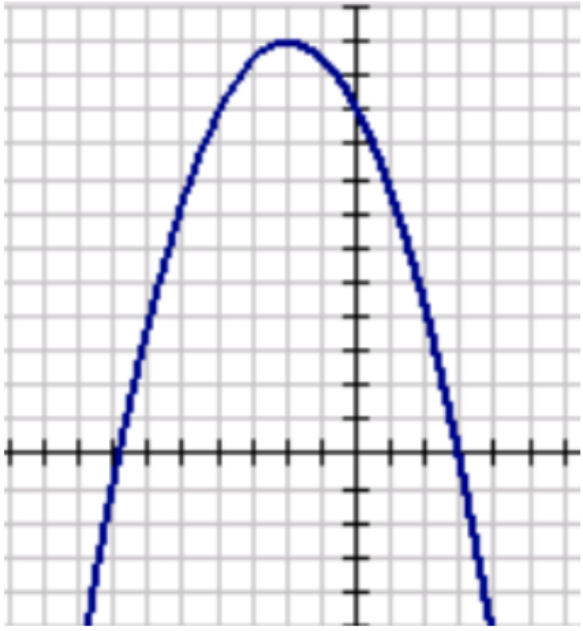
$$y = (\frac{7}{2})(-\frac{7}{2})$$

$$y = -\frac{49}{4} = -12\frac{1}{4}$$

2.	You get this:	Fill in this:
$y = x^2 - 6x + 3$		Vertex form of the equation:
		Graph of the equation: 



3. You get this:	Fill in this:
	Vertex form of the equation:
	Standard form of the equation:

4. You get this:	Fill in this:
	Factored form of the equation:
	Standard form of the equation:

5.	You get this:	Fill in this:
$y = -x^2 - 6x + 16$		Either form of the equation other than standard form.
		Vertex of the parabola
		x-intercepts and y-intercept

6. You get this:	Fill in this:
$y = 2x^2 + 12x + 13$	Either form of the equation other than standard form.
	Vertex of the parabola
	x-intercepts and y-intercept

7.	You get this:	Fill in this:
	$y = -2x^2 + 14x + 60$	Either form of the equation other than standard form.
		Vertex of the parabola
		x-intercepts and y-intercept

Homework

Finish 2.9 "Ready, Set, Go"