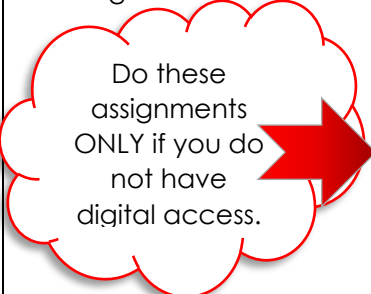


Student Time Expectation per day: **30 minutes**

Content Area & Materials	Learning Objectives	Tasks	Check-in Opportunities	Submission of Work for Grades					
<p><b>Digital</b></p> <p>(If you can work digitally, please do. It will help to keep us all safe 😊)</p> <ul style="list-style-type: none"> <li>Khan Academy (KA) Access Code</li> <li>Summary Assignment Posted on Edmodo</li> </ul>	<p><u>Suggested Order / Pacing Review</u></p> <ul style="list-style-type: none"> <li>Factoring by Grouping (Monday)</li> <li>Factoring w/Difference of Squares (Tuesday)</li> <li>Strategies in Factoring (Wednesday)</li> <li>Intro to Parabolas (Thursday)</li> <li>Summary Assignment (Friday)</li> </ul>	<ul style="list-style-type: none"> <li>Students are to complete the assigned <b>Khan Academy assignments</b>.</li> <li>After completing the Khan Academy assignments, please complete the <b>summary assignment</b>.</li> </ul>	<p>Mrs. Wong is available during the office hours at the times indicated below. You can reach Mrs. Wong during these office hours via:</p> <ul style="list-style-type: none"> <li>Zoom link provided in Edmodo</li> <li>Email cwong@tusd.net</li> </ul>	<ul style="list-style-type: none"> <li>KA assignments will be recorded with the highest scores attained</li> <li>Submit the summary assignment through a picture via Remind App. (Scored on Accuracy)</li> </ul>					
<p><b>Hard Copy</b> (Please only use this if you do not have technology available)</p> <ul style="list-style-type: none"> <li>Notes + Examples</li> <li>Assignments</li> </ul> 	<p><u>Suggested Order / Pacing Review</u></p> <ul style="list-style-type: none"> <li>Factoring by Grouping (Monday)</li> <li>Factoring w/Difference of Squares (Tuesday)</li> <li>Strategies in Factoring (Wednesday)</li> <li>Intro to Parabolas (Thursday)</li> <li>Summary Assignment (Friday)</li> </ul>	<ul style="list-style-type: none"> <li>Students are to <b>read</b> the lesson and examples provided</li> <li>On a separate sheet of paper for each assignment, <b>complete</b> ALL problems showing your work.</li> </ul>	<p>Mrs. Wong is available during the office hours at the times indicated below. You can reach Mrs. Wong during these office hours via:</p> <ul style="list-style-type: none"> <li>Zoom link provided in Edmodo</li> <li>Email cwong@tusd.net</li> </ul>	<ul style="list-style-type: none"> <li>Group your work together for your math class IN ORDER, and with the following labels clearly displayed:</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Student Name:</td> </tr> <tr> <td>Teacher Name:</td> </tr> <tr> <td>Class Name/Subject:</td> </tr> <tr> <td>Period:</td> </tr> <tr> <td>Assignment Week #</td> </tr> </table> <ul style="list-style-type: none"> <li>Assignments will be scored on accuracy.</li> </ul>	Student Name:	Teacher Name:	Class Name/Subject:	Period:	Assignment Week #
Student Name:									
Teacher Name:									
Class Name/Subject:									
Period:									
Assignment Week #									
<p><b>Scheduled</b>, if possible,</p> <ul style="list-style-type: none"> <li>Discussion</li> </ul>	<p>Zoom classes will be held on Tuesdays and Thursdays for 30 minutes, followed by 30 minutes of office hours. Schedule meetings during office hours by emailing me. Discussions will revolve around discovery and application of concepts assigned for the week.</p>								
<p><b>Scaffolds &amp; Supports</b></p>	<p>KA assignments can often be re-tried to improve learning. Videos are utilized to demonstrate not only key concepts, but also frequent points of errors, helping students avoid pitfalls.</p>								
<p><b>Teacher Office Hours</b></p>	<p><b>Monday</b></p> <p><b>10AM-12PM</b></p>	<p><b>Tuesday</b></p> <p><b>1PM Alg. 1</b> (30 min) followed by Q&amp;A</p>	<p><b>Wednesday</b></p> <p><b>10AM-12PM</b></p>	<p><b>Thursday</b></p> <p><b>1PM Alg. 1</b> (30 min) followed by Q&amp;A</p>	<p><b>Friday</b></p> <p><b>10AM-12PM</b></p>				

Student Name:  
 Teacher Name: **Wong**  
 Class Name/Subject:  
**Algebra 1**  
 Period:  
 Assignment Week #: **2**

NOTES: Complete all work on a separate sheet of paper. Include the heading provided on each worksheet you turn in. Show all work.

# Monday

Factoring by Grouping.

Factor  $12x^2 - 5x - 2$  using the Diamond Method.

Step 1: Multiply the coefficient of the  $x^2$  term (+12) and the constant (-2) and place this product (-24) in the top quarter of a large "X."

Step 2: Place the coefficient of the middle term in the bottom of the "X." (-5)

Step 3: List all factors of -24:

	-24	
(+1)(-24)	(-1)(+24)	
(+2)(-12)	(-2)(+12)	
(+3)(-8)	(-3)(+8)	
(+4)(-6)	(-4)(+6)	



Step 4: Identify the factors whose sum is -5: (+3 · -8 = -24 and 3 · -8 = -5) and place them in the left and right quarters of the "X" (order is not important).

Step 5: Break the middle term of the original trinomial into the sum of two terms formed using the right and left quarters of the "X."  
 $12x^2 - 5x - 2 = 12x^2 + 3x - 8x - 2$

Step 6: Factor by Grouping:

Group the first two terms together and the last two terms together.

$$12x^2 + 3x - 8x - 2$$

Factor out common factors from each group. (Factor out negative.)

$$3x(4x + 1) - 2(4x + 1)$$

Factor out the common binomial factor.

$$(4x + 1)(3x - 2)$$

Use the diamond method to rewrite the trinomial as a 4-term polynomial.

Then factor by grouping.

Directions: Factor each polynomial.

1.  $x^3 + 4x^2 + 8x + 32$

$$x^2(x+4) + 8(x+4)$$

$$(x^2 + 8)(x + 4)$$

2.  $a^3 + 2a^2 + 9a + 18$

$$a^2(a+2) + 9(a+2)$$

$$(a^2 + 9)(a + 2)$$

9.  $16a^3 + 8a^2 - 6a - 3$

$$8a^2(2a+1) - 3(2a+1)$$

$$(8a^2 - 3)(2a + 1)$$

10.  $10m^3 - 25m^2 + 4m - 10$

$$5m^2(2m-5) + 2(2m-5)$$

$$(5m^2 + 2)(2m - 5)$$

13.  $a^3 + a^2b + ab + b^2$

$$a^2(a+b) + b(a+b)$$

$$(a^2 + b)(a + b)$$

14.  $4r^2s - 8rs - 3r + 6$

$$4rs(r-2) - 3(r-2)$$

$$(4rs - 3)(r - 2)$$

# Tuesday

Factoring difference of squares.

Steps to Factor a DIFFERENCE OF SQUARES

- First, make sure you have an actual difference of squares! (Must be a subtraction sign and you can square root both terms)
- Use the following rule to factor:  $a^2 - b^2 = (a+b)(a-b)$
- Check your work by distributing!

Directions: Factor each difference of squares. Check your work by distributing. If a polynomial cannot be factored, write "prime."

1.  $a^2 - 4$

$$(a+2)(a-2)$$

2.  $n^2 - 64$

$$(n+8)(n-8)$$

3.  $81 - x^2$

$$(9+x)(9-x)$$

4.  $c^2 - 100$

$$(c+10)(c-10)$$

7.  $9b^2 - 100$

$$(3b+10)(3b-10)$$

8.  $25x^2 - 49$

$$(5x+7)(5x-7)$$

9.  $16a^2 - 121$

$$(4a+11)(4a-11)$$

10.  $x^2 - 81y^2$

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

Directions: Look for a GCF first, then factor the remaining difference of squares. Check your work by distributing.

21.  $2n^2 - 72$

$$2(n^2 - 36)$$

$$2(n+6)(n-6)$$

22.  $18x^2 - 50$

$$2(9x^2 - 25)$$

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

Remember perfect squares.

Problems look trickier, but you must recall perfect squares.

Factor GCF first, then factor by difference of

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 turn in. Show all work.

# Wednesday

A. $50n^2 - 60n + 18$	B. $10x^2 + 40x$	C. $16r^3 + 24r^2 + 2r + 3$	D. $2p^2 - 32$
E. $8x^2 - 17x + 8$	F. $10v^2 + 11v + 1$	G. $30k^3 - 123k^2 - 54k$	H. $70h^3 - 30h^2 + 42h - 18$

## Factor out the GCF

### 2 terms

- Factor GCF
- Look for difference of squares

B.  $\frac{10x^2 + 40x}{10x} = \frac{10x(x+4)}{10x}$  factor GCF

D.  $\frac{2p^2 - 32}{2} = \frac{2(p^2 - 16)}{2}$  Factor GCF  
 $2(p+4)(p-4)$  Difference of Squares

### 3 terms

- Factor GCF
- Use Box OR Split the Middle

A.  $50n^2 - 60n + 18$   
 $2(25n^2 - 30n + 9)$   
 Box Method:  

$5n$	$-3$
$25n^2$	$-15n$
$-3$	$9$

 $2(5n-3)(5n-3) \Rightarrow 2(5n-3)^2$  Identical factors

E.  $8x^2 - 17x + 8$   
 Unfactorable

F.  $10v^2 + 11v + 1$   
 $\frac{10v^2 + 10v + 1v + 1}{10v \quad 10v \quad 1 \quad 1}$   
 $10v(v+1) + 1(v+1)$   
 $(10v+1)(v+1)$

G.  $30k^3 - 123k^2 - 54k$   
 $3k(10k^2 - 41k - 18)$   
 $10k^2 + 4k - 45k - 18$   
 $2k(5k+2) - 9(5k+2)$   
 $3k(2k-9)(5k+2)$

4 terms  
 Factor GCF  
 Factor by Grouping

C.  $16r^3 + 24r^2 + 2r + 3$   
 $\frac{16r^3}{8r^2} + \frac{24r^2}{8r^2} + \frac{2r}{8r^2} + \frac{3}{8r^2}$   
 $2r^2(2r+3) + \frac{1}{8r^2}(2r+3)$

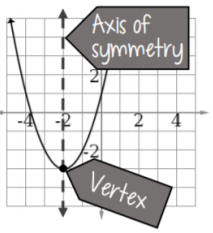
H.  $70h^3 - 30h^2 + 42h - 18$   
 $2(35h^3 - 15h^2 + 21h - 9)$   
 $5h^2(7h-3) + 3(7h-3)$   
 $2(5h^2+3)(7h-3)$

Ratios must be exact answers. Do not convert to decimals.

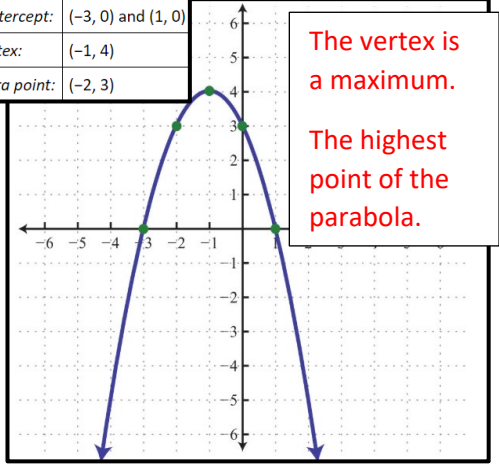
# Thursday

## GRAPHING QUADRATICS

Graphs of quadratics are called parabolas. The vertex is the maximum or minimum **POINT**  $(-2, -3)$ .  
 The axis of symmetry is the LINE that divides the parabola into two matching halves.  $x = -2$



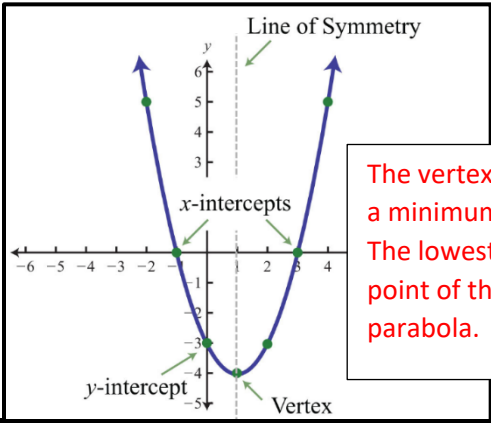
y-intercept:	(0, 3)
x-intercept:	(-3, 0) and (1, 0)
Vertex:	(-1, 4)
Extra point:	(-2, 3)



The vertex is a maximum.  
 The highest point of the parabola.

All graphs must be done on graph paper and labeled and scaled appropriately.

The PARENT GRAPH for a quadratic function is  $Y = X^2$ . Let's see what transformations happen when we change part of that equation.



The vertex is a minimum.  
 The lowest point of the parabola.

Every point on the parabola has the same distance to the axis of symmetry.

Student Name:  
Teacher Name: **Wong**  
Subject: **Algebra 1**  
Period:  
Assignment Week #: **2**

Do these assignments  
ONLY if you do not have  
digital access!

Complete all work on a separate sheet of  
paper. **Show all work.** Include the heading  
provided on each worksheet you turn in.

## Monday

## Tuesday

1.) Factor the quadratic expression completely.

a.)  $2x^2 + 7x + 3$

b.)  $3x^2 - 20x - 7$

1.) Factor completely.

a.)  $49x^2 - 9$

b.)  $4x^2 - 1$

2.) Factor the quadratic expression completely.

a.)  $8x^2 - 18x - 5$

b.)  $12x^2 + 17x + 6$

2.) Factor completely.

a.)  $100x^2 - y^2$

b.)  $2x^2 - 162$

3.) Factor the quadratic expression completely.

a.)  $2x^2 - 13x + 20$

b.)  $-8x^2 - 15x + 2$

3.) Factor completely.

a.)  $108 - 3x^2$

b.)  $640 - 10x^2$

4.) Factor the quadratic expression completely.

a.)  $-7x^2 - 24x - 9$

b.)  $-3x^2 + 17x - 20$

4.) Factor completely.

a.)  $25x^2 - 16$

b.)  $81 - 4x^2$

5.) Factor the quadratic expression completely.

a.)  $15x^2 - 4x - 4$

b.)  $6x^2 - 13x + 6$

5.) Factor completely.

a.)  $16 - 49y^2$

b.)  $5x^2 - 320$

6.) Factor the quadratic expression completely.

a.)  $96n^3 - 84n^2 + 112n - 98$

b.)  $105n^3 + 175n^2 - 75n - 125$

c.)  $28n^3 + 16n^2 - 21n - 12$

6.) Factor completely.

a.)  $96 - 6x^2$

b.)  $16x^2 - 81$

7.) Factor completely.

a.)  $2x^2 - 50$

b.)  $3x^2 - 147$

Student Name:  
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Subject: **Algebra 1**  
Period:  
Assignment Week #: **2**

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Do these assignments  
ONLY if you do not have  
digital access!

## Wednesday

## Thursday

- 1.) Factor completely.  
a.)  $9x^2 - 9$   
b.)  $20x^2 - 1$

- 2.) Factor completely.  
a.)  $9x^2 - 81$   
b.)  $25x^2 - 64$

- 3.) Factor completely.  
a.)  $28a^2b - 63b$   
b.)  $8x^4 - 4x^3 - 24x^2$

- 4.) Factor completely.  
a.)  $2x^2 + 38w + 140$   
b.)  $5a^2 + 10ab - 3a - 6b$

- 5.) Factor completely.  
a.)  $x^2 - 7x - 78$   
b.)  $24ab + 30ac$

- 6.) Factor completely.  
a.)  $4a^3 - a^2b - 36a + 9b$   
b.)  $2y^2 - 9y - 18$

- 7.) Factor completely.  
a.)  $14x^3 - 7x^2 + 2xy - y$   
b.)  $3x^2 - 6x + 3$

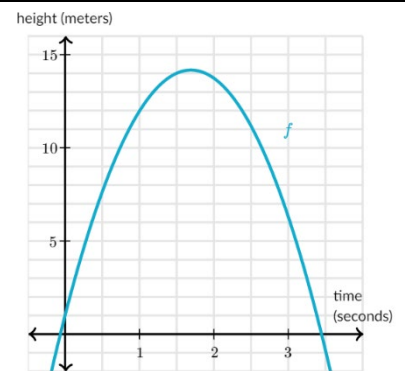
**All graphs must be on graph paper. Scale and label your graphs appropriately. You must plot five points; the vertex and two points (to the left and right of the vertex). Label the axis of symmetry and the vertex.**

- 1.) On graph paper sketch a parabola that opens-up.  
2.) On graph paper sketch a parabola that has exactly one x-intercept.  
3.) On graph paper sketch a parabola that intersects the x-axis at  $x=3$  and  $x=9$ .

- 4.) On graph paper sketch a parabola whose vertex is at  $(3,5)$  with y-intercept at  $y=1$ .  
5.) On graph paper sketch a parabola whose x-intercepts are at  $x=-3$  and  $x=5$  and whose minimum value is  $(0, -4)$ .

**HINT: Remember to scale and label your graph.**

- 6.) Sarah kicked a ball in the air. The function  $f(x)$  models the height of the ball (in meters) as a function of time (in seconds) after Sarah kicked it.



Which of these statements are true? Justify your reasoning.

- a.) Sarah kicked the ball from a height of about 1 m.  
b.) Sarah kicked the ball from a height of about 14 m.  
c.) At its highest point, the ball was about 1.75 m above the ground.  
d.) At its highest point, the ball was about 14 m above the ground.

## Summary Assignment Week #2

SHOW YOUR WORK on a separate sheet of paper

Student Name: \_\_\_\_\_

Teacher \_\_\_\_\_

Subject \_\_\_\_\_

Period \_\_\_\_\_

Week 2

Mixed Factoring Practice

Make sure to factor completely ☺

Don't forget to factor out GCF 1<sup>st</sup> if possible.

$$13a^3 - 13$$

$$2b^3 - 200b$$

$$c^2 + 18c + 81$$

$$4d^2 - 20d + 25$$

$$5e^2 - 15e - 20$$

$$f^2 - 11f + 30$$

$$12g^2 + 2g - 2$$

$$h^3 + 5h^2 - 8h - 40$$

$$16i^3 + 8i^2 - 6i - 3$$

Parabolas

On the grid to the right, draw four parabolas, one with a vertex at **EACH** point on the grid. Your parabola **MUST** have the exact shape created by the table below.

**From each Vertex**

Left/ right	Up/ down
-2	4
-1	1
0	0
1	1
2	4

