

March 11, 2019, Monday

SAMPLE ITEMS

1. In which expression is the coefficient of the n term -1 ?

- A. $3n^2 + 4n - 1$
- B. $-n^2 + 5n + 4$
- C. $-2n^2 + n + 5$
- D. $4n^2 + n - 5$

$$\sqrt{x^2}$$



2. The expression s^2 is used to calculate the area of a square, where s is the side length of the square. What does the expression $(8x)^2$ represent?

- A. the area of a square with a side length of 8
- B. the area of a square with a side length of 16
- C. the area of a square with a side length of $4x$
- D. the area of a square with a side length of $8x$

$$s^2 = (8x)^2$$

= side

$$s = 8x$$

Answers to Unit 1.3 Sample Items

1. C 2. D

Intro to Factoring Quadratics

Name: _____

1. Find two numbers that sum to 8 and have a product of 12 2, 6
 $1+7=8$ $3+5=8$ $2+6=8$ $4+4=8$
 $1 \cdot 12=12$ $3 \cdot 4=12$ $2 \cdot 6=12$
2. Find two numbers that sum to 5 and have a product of 6 2, 3
 $2+3=5$ $2 \cdot 3=6$
3. Find two numbers that sum to 5 and have a product of -14 7, -2
 $7+(-2)=5$ $7 \cdot (-2)=-14$
4. Find two numbers that sum to -8 and have a product of 12 -6, -2
 $-6+(-2)=-8$ $-6 \cdot (-2)=12$
5. Find two numbers that sum to 16 and have a product of 15 1, 15
 $3+5=8$ $1+15=16$ $1 \cdot 15=15$
6. Find two numbers that sum to -4 and have a product of -21 -7, 3
 $-1 \cdot 15=-15$ $3 \cdot 5=15$ $-1 \cdot (-15)=15$ $-3 \cdot (-5)=15$
7. Find two numbers that sum to 1 and have a product of -56 -7, 8
 $-7+8=1$ $1 \cdot (-56)=-56$ $4 \cdot (-14)=-56$
8. Find two numbers that sum to -14 and have a product of 40 -10, -4
 $-1 \cdot 56=-56$ $-4 \cdot 14=-56$ $2 \cdot 28=56$ $7 \cdot 8=56$
9. Find two numbers that sum to 0 and have a product of -25 5, -5
 $-1 \cdot 25=-25$ $5 \cdot (-5)=-25$
10. Find two numbers that sum to 8 and have a product of 16 4, 4
 $1 \cdot 16=16$ $2 \cdot 8=16$ $4 \cdot 4=16$
 $-1 \cdot (-16)=16$ $-2 \cdot (-8)=16$ $-4 \cdot (-4)=16$

11. Multiply the following:

a. $(x+6)(x+3)$

$6+3=9$
 $6 \cdot 3=18$

$$\begin{array}{r} x^2 + 3x + 6x + 18 \\ \hline x^2 + 9x + 18 \end{array}$$

$x^2 + 9x + 18$

b. $(x+7)(x-2)$

$$\begin{array}{r} x^2 - 2x + 7x - 14 \\ \hline x^2 + 5x - 14 \end{array}$$

$7+(-2)=5$
 $7 \cdot (-2)=-14$

$x^2 + 5x - 14$

Notice: What is the sum of the constants in each binomial above?

Notice: What is the product of the constants in each binomial above?

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Notice: What is the product of the constants in each binomial above?

Unit 3a Day 2 Notes Factoring Trinomials when a = 1

MCC9-12.A.SSE.3a: I can factor a quadratic expression to reveal the zeroes of the function it defines.

Now let's factor trinomials! (3 terms)

- Remember, we undo multiplying!

Example 1: $x^2 + 5x + 6$
 $x \cdot x + 5 \cdot x + 2 \cdot 3$

1. Is there a GCF? Yes or No

To factor a trinomial, it breaks down into a product of binomials (2 terms each)

What are the factors of 6 (what pairs multiply to 6)? $\begin{matrix} +1 \cdot 6 \\ -1 \cdot -6 \\ +2 \cdot 3 \\ -2 \cdot -3 \end{matrix}$ Which pair adds to be 5?

$\xrightarrow{2+3=5}$

Answer: $(x + 2)(x + 3)$

Now you try!

<p>1. $x^2 + 7x + 12$ $(x+3)(x+4)$</p> <p>$\begin{matrix} +7 \\ 3 \cdot 4 \\ +12 \end{matrix}$</p>	<p>2. $x^2 + 12x + 20$ $(x+2)(x+10)$</p>
<p>3. $x^2 + 8x + 12$ $(x+2)(x+6)$</p> <p>$\begin{matrix} 8 \\ 2 \cdot 6 \\ 1 \cdot 12 \quad -2 \cdot -6 \\ -1 \cdot -12 \quad 3 \cdot 4 \\ 2 \cdot 6 \quad -3 \cdot -4 \end{matrix}$</p>	<p>4. $x^2 + 6x + 9$ $(x+3)(x+3)$</p> <p>$\begin{matrix} 6 \\ 3 \cdot 3 \\ 9 \\ -1 \cdot -9 \quad 3 \cdot 3 \\ -1 \cdot -9 \quad -3 \cdot -3 \end{matrix}$</p>
<p>5. $x^2 - x - 12$ $(x+3)(x-4)$</p> <p>$\begin{matrix} -1 \\ 3 \cdot -4 \\ -12 \\ 1 \cdot -12 \quad -2 \cdot 6 \\ -1 \cdot 12 \quad 3 \cdot -4 \\ 2 \cdot -6 \quad -3 \cdot 4 \end{matrix}$</p>	<p>6. $x^2 - 2x - 24$ $(x-6)(x+4)$</p> <p>$\begin{matrix} -2 \\ -6 \cdot 4 \\ -24 \end{matrix}$</p>
<p>7. $x^2 - 6x + 8$ $(x-2)(x-4)$</p> <p>$\begin{matrix} -6 \\ -2 \cdot 4 \\ 8 \\ -1 \cdot -8 \\ 2 \cdot 4 \end{matrix}$</p> <p>$\begin{matrix} 2 \cdot 4 \\ -2 \cdot 4 \end{matrix}$</p>	<p>8. $x^2 - 11x + 24$ $(x-3)(x-8)$ $(x-8)(x-3)$</p> <p>$\begin{matrix} -11 \\ -3 \cdot -8 \\ 24 \end{matrix}$</p> <p>$\begin{matrix} 1+24=25 \\ -1+24=23 \\ 2 \cdot 12 \quad 4 \cdot 6 \\ -2 \cdot -12 \quad -4 \cdot -6 \\ 3 \cdot 8 \end{matrix}$</p>

GSE Algebra I

Unit 3A – Factoring Quadratics

Name _____

Date _____

Factoring Trinomials ($ax^2 + bx + c$)

Factor each trinomial completely. *Hint - #8-10 take out a GCF first!
1-6 find 3 to do!

<p>1. $x^2 - 5x - 14$</p> <p>$(x+2)(x-7)$ $-2 \cdot -7 = 14$ $-2 + -7 = -9$ $\begin{array}{r} 2 \\ -5 \\ -14 \end{array}$</p>	<p>2. $x^2 - 2x - 24$</p>
<p>3. $x^2 + x - 20$</p> <p>$(x-4)(x+5)$ $-4 \cdot +5 = -20$ $\begin{array}{r} +1 \\ -4 \\ -20 \end{array}$</p>	<p>4. $x^2 - 5x - 66$</p>
<p>5. $x^2 - 10x - 24$</p>	<p>6. $x^2 + 7x - 18$</p> <p><i>coefficient in front of x^2! GCF?!?</i></p>
<p>7. $x^2 - 6x - 16$</p>	<p>8. $2x^3 + 12x^2 + 18x$</p> <p><i>GCF</i> \downarrow $\underline{2x}xx + \underline{2 \cdot 6}x \cdot x + \underline{2 \cdot 9}x$ <i>GCF?</i> $2x(x^2 + 6x + 9)$ $2x(x+3)(x+3)$ $\begin{array}{r} 6 \\ 3 \\ 9 \end{array}$</p> <p><i>TRY 1</i> \downarrow</p>
<p>9. $3x^2 + 12x - 63$</p> <p>$3(x^2 + 4x - 21)$ $3(x+7)(x-3)$ $3(x-3)(x+7)$</p> <p>$\begin{array}{r} 4 \\ +7 \\ -21 \end{array}$</p>	<p>10. $x^3 - 6x^2 - 20x$</p> <p>$2x(x^2 - 3x - 10)$ $2x(x+2)(x-5)$</p> <p>$\begin{array}{r} 3 \\ -5 \\ -10 \end{array}$</p>

Algebra 1

Name _____

ID: 1

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Factoring In-Class Assignment

Factor the common factor out of each expression.

1) $-24x^3 + 30x + 24$

$6(4x^3 + 5x + 4)$

2) $-35r + 45$

$5(-7r + 9)$

3) $70x^6 + 63x^2 - 42x$

$7x(10x^5 + 9x - 6)$

4) $63x^3 - 28$

$7(9x^3 - 4)$

Factor each completely.

5) $p^2 - 9p + 14$

$(x-2)(x-7)$

6) $a^2 - 81$

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

7) $x^2 - 3x - 4$

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

8) $m^2 - 1$

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

9) $n^2 - 8n + 16$

$(x-4)(x-4)$

10) $r^2 + 2r - 80$

$(x+10)(x-8)$

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11) $5a^2 + 17a + 6$

12) $2x^2 - 15x + 28$

13) $8k^2 + 30k + 7$

14) $4a^2 - 17a + 4$

Factor each completely. ALL have a GCF!!!

15) $3n^2 - 21n + 30$

16) $2b^2 + 18b - 20$

17) $4m^2 - 4$

18) $6x^2 + 30x - 36$

19) $4b^2 - 26b + 36$

20) $20p^2 + 38p + 14$

March 12, 2019, Tuesday

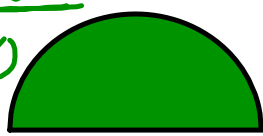
1. What is the product of $7x - 4$ and $8x + 5$?

- A. $15x + 1$
- B. $30x + 2$
- C. $56x^2 + 3x - 20$
- D. $56x^2 - 3x + 20$

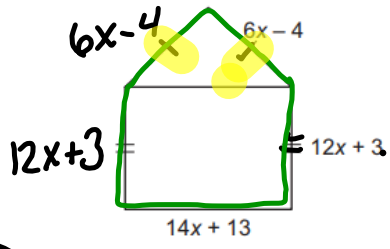
$(7x - 4)(8x + 5)$

$$56x^2 + 35x - 32x - 20$$

$$56x^2 + 3x - 20$$



2. A model of a house is shown.



$$\underline{6x-4} + \underline{6x-4} + \underline{12x+3} + \underline{14x+13}$$

$$+ \underline{12x+3}$$

$$50x + 11$$

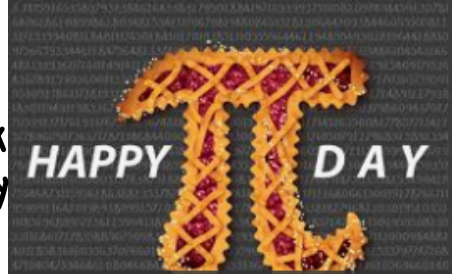
What is the perimeter, in units, of the model?

- A. $32x + 12$
- B. $46x + 25$
- C. $50x + 11$
- D. $64x + 24$

<p>Factor by GCF:</p> <p>$54b^3 + 48b^2 =$ $\overset{54}{\underset{33}{\overset{9}{\uparrow}}} \overset{6}{\underset{32}{\overset{6}{\uparrow}}} \overset{48}{\underset{232}{\overset{68}{\uparrow}}} \overset{24}{\underset{2}{\uparrow}}$ $2 \cdot 3 \cdot 3 \cdot 3 \cdot b \cdot b \cdot b + 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot b \cdot b$ $6b^2(9b + 8)$</p> <p>$9m^2 - 27m + 9m^3 =$ $\overset{9}{\underset{33}{\overset{3}{\uparrow}}} \overset{27}{\underset{39}{\overset{3}{\uparrow}}} \overset{9}{\underset{33}{\overset{3}{\uparrow}}}$ $3 \cdot 3 \cdot m \cdot m - 3 \cdot 3 \cdot 3 \cdot m + 3 \cdot 3 \cdot m \cdot m$ $9m(m - 3 + m^2)$</p>	<p>Factor by DOTS (Difference of 2 Squares)</p> <p>$a^2 - b^2 = (a+b)(a-b)$</p> <p>$9 - 4x^2 =$ $(3)^2 - (2x)^2 \quad a=3, b=2x$ $(3+2x)(3-2x)$</p> <p>$4x^2 - 16 =$ $(2x)^2 - (4)^2 \quad a=2x, b=4$ $(2x+4)(2x-4)$</p> <p>$a \neq 1, \text{ NO GCF}$</p>
<p>Factor by $a = 1$ (Factors of c that add to b)</p> <p>$x^2 - 15x + 56 =$ $(x-7)(x-8)$</p> <p>$2x^2 + 2x - 4 =$ $2(x^2 + x - 2) = 2(x-1)(x+2)$</p> <p>$-1 \cdot 2$ $-1 \cdot 2$</p>	<p>Factor by $a \neq 1$ (Bottoms Up Method)</p> <p>$9x^2 + 27x + 8 =$ $x^2 + 27x + 72 = (x+3)(x+24)$ $(x+3)(x+8) = (3x+1)(3x+8)$</p> <p>$20x^2 - 38x + 12 =$ $1 \cdot 72 \quad 3 \cdot 24$ $-1 \cdot 72 \quad -3 \cdot 24$ $2 \cdot 36$ $-2 \cdot 36$</p>

$$\begin{array}{l}
 \text{* 10} \\
 \underline{20x^2 - 38x + 12 =} \\
 2(10x^2 - 19x + 6) \\
 2(x^2 - 19x + 60) \\
 2(x - \underset{\substack{\uparrow \\ /10}}{4})(x - \underset{\substack{\uparrow \\ /10}}{15}) \\
 2(x - \underset{\substack{\uparrow \\ /5}}{2})(x - \underset{\substack{\uparrow \\ /3}}{3}) \\
 2(5x - 2)(2x - 3)
 \end{array}
 \quad
 \begin{array}{r}
 + \\
 \cancel{-19} \\
 \cancel{-4} \quad \cancel{-15} \\
 \cancel{60} \\
 * \\
 -4 \cdot -15
 \end{array}$$

March 13, 2019, Wednesday
14, 2019, Thursday



1. Which expression is equivalent to $121x^2 - 64y^2$?

- A. $(11x - 16y)(11x + 16y)$
- ~~B. $(11x - 16y)(11x - 16y)$~~
- ~~C. $(11x + 8y)(11x + 8y)$~~
- D. $(11x + 8y)(11x - 8y)$

$(11x)^2 - (8y)^2$ $a=11x$
 $b=8y$

$(11x + 8y)(11x - 8y)$

2. What is a common factor for the expression $24x^2 + 16x + 144$?

- A. 16
- B. $8x$
- \rightarrow C. $3x^2 + 2x + 18$
- D. $8(x - 2)(3x^2 + 9)$

$\frac{8}{8} \frac{8}{8} \frac{8}{8}$

$8(3x^2 + 2x + 18)$

GCF \uparrow F



3. Which of these shows the complete factorization of $6x^2y^2 - 9xy - 42$?

- ~~A. $3(2xy^2 - 7)(xy^2 + 2)$~~
- ~~B. $(3xy + 6)(2xy - 7)$~~
- \rightarrow C. $3(2xy - 7)(xy + 2)$
- D. $(3xy^2 + 6)(2xy^2 - 7)$

$6x^2y^2 - 9xy - 42$

$3(2x^2y^2 - 3xy - 14)$

$3(2xy^2 - 7)(xy + 2)$

$3(x^2y^2 - 3xy - 28)$

$3(2x^2y^4 + 4xy^2 - 7xy^2 - 14)$

$3(2x^2y^4 - 3xy^2 - 14)$

$6x^2y^4 - 9xy^2 - 28$

$3(xy + 2)(2xy - 7)$

$4 + 7 =$
 $-4 + 7 =$

March 14, 2019, Thursday

- Consider the expression $3n^2 + n + 2$.
- a. What is the coefficient of n ? 1

b) What is the coefficient of n^2 ? 3

- Factor the expression $12x^2 + 14x - 6$

Factorization process for $12x^2 + 14x - 6$:

$$12 \begin{matrix} \wedge \\ 4 \end{matrix} \begin{matrix} \wedge \\ 3 \end{matrix} \quad 14 \begin{matrix} \wedge \\ 2 \end{matrix} \begin{matrix} \wedge \\ 7 \end{matrix} \quad 6 \begin{matrix} \wedge \\ 2 \end{matrix} \begin{matrix} \wedge \\ 3 \end{matrix}$$

Bottom up!

$$2 \cdot 2 \cdot 3 \cdot x \cdot x + 2 \cdot 7 \cdot x - 2 \cdot 3$$

$$2(6x^2 + 7x - 3)$$

- Factor the expression $16a^2 - 81$.

* 2 terms DOTS

$$(4a)^2 - (9)^2$$

$$(4a + 9)(4a - 9)$$

WOW

Factorization process for $16a^2 - 81$:

$$2(x^2 + 7x - 18) +$$

$$2(x - 2)(x + 9) \begin{matrix} 7 \\ 6 \\ -2 \\ 9 \end{matrix}$$

$$2(x - 3)(x + 3) \begin{matrix} 6 \\ -2 \\ 9 \end{matrix}$$

$$2(3x - 1)(2x + 3) \begin{matrix} 1 \cdot 18 \\ 1 \cdot 18 \\ 2 \cdot 9 \\ -3 \cdot 6 \end{matrix}$$

Quiz

1-3, 2 only have a GCF

3-6 choose 3

7-10 choose 3

3) $25p^2 - 4$ DOTS #3, 6, 11
 $(5p)^2 - (2)^2$ $a^2 - b^2 = (a+b)(a-b)$
 $a = 5p$
 $b = 2$

$(5p + 2)(5p - 2)$

A $(5p - 2)(5p + 2)$

B $(25p - 1)(25p + 1)$

C

D

13) $\frac{28x^2}{4} + \frac{8x}{4} - \frac{36}{4}$

$4(7x^2 + 2x - 9)$

$4(x^2 + 2x - 63)$

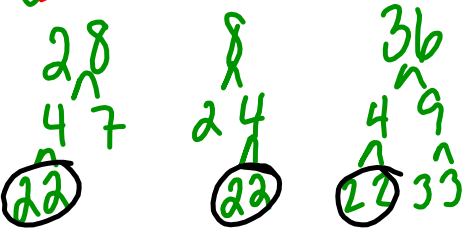
$4(x - 7)(x + 9)$

$4(x - 1)(7x + 9)$

GCF? ✓

~~DOTS?~~

$a = 1$ tri X
 $a \neq 1$ Bottoms up




Algebra 1: Unit 3A Study Guide

Name: _____

Factor out the Greatest Common Factor		
1. $2x - 8$ $\frac{2}{2} \frac{-8}{-4}$ $2(x - 4)$	2. $15x - 3y$ $\frac{3}{3} \frac{-y}{-1}$ $3(5x - y)$ ↑ GCF	3. $x^3y - 7xy + x^2y^3$ $\frac{xy}{xy} \frac{y}{y} \frac{-7xy}{-7xy} + \frac{xy}{xy} \frac{y^3}{y^2}$ $xy(x^2 - 7 + xy^2)$
Factor trinomials when a = 1		
4. $x^2 - 14x - 15$ $(x+1) \cdot \frac{-14}{-15}$ $(x-15)$	5. $x^2 - 12x + 36$ $(x-6)(x-6)$ $\frac{-12}{-6} \frac{36}{36}$	6. $b^2 + 8b + 7$ $(b+1)(b+7)$ $\frac{8}{7}$
7. $n^2 - 11n + 10$ $(n-1)(n-10)$ $\frac{-11}{-10}$	8. $m^2 + m - 90$ $(m-9)(m+10)$ $\frac{1}{-9} \frac{10}{10}$ $1 \cdot 90 \quad 3 \cdot 30 \quad 6 \cdot 15$ $2 \cdot 45 \quad 5 \cdot 18 \quad 9$	9. $n^2 + 4n - 12$ $(n-2)(n+6)$ $\frac{4}{-12}$
Factor out the difference of squares.		
10. $\frac{3n^2 - 75}{3}$ $3(n^2 - 25)$ $3((n)^2 - (5)^2)$ $3(n+5)(n-5)$	11. $h^2 - 81$ $a^2 - b^2 = (a+b)(a-b)$ $(h)^2 - (9)^2$ $(h+9)(h-9)$ $a=h \quad b=9$	12. $2d^2 - 50$ $\frac{2}{2} \frac{-50}{-25}$ $2(d^2 - 25)$ $2((d)^2 - (5)^2)$ $2(d+5)(d-5)$
Factor out the trinomials when a is greater than 1		
13. $2x^2 - 5x - 3$ $x^2 - 5x - 6$ $(x+1)(x-6)$ $(2x+1)(x-3)$ $\frac{-5}{-6}$	14. $3x^2 + 5x - 12$ $x^2 + 5x - 36$ $(x-4)(x+9)$ $(3x-4)(x+3)$ $\frac{5}{-36}$ $-4 \cdot 9$	15. $2x^2 + x - 15$ $x^2 + x - 30$ $(x-5)(x+6)$ $(2x-5)(x+3)$ $\frac{1}{-30}$ $3 \cdot 5$ $1 \cdot 15$ $2 \cdot 15$ $2 \cdot 2 \cdot 3$
16. $5x^2 + 7x + 2$ $x^2 + 7x + 10$ $(x+2)(x+5)$ $(5x+2)(x+1)$ $\frac{7}{10}$	17. $9x^2 - 6x + 1$ $x^2 - 6x + 9$ $(x-3)(x-3)$ $(x-3)(x-3)$ $(3x-1)(3x-1)$ $(3x-1)^2$ $\frac{-6}{9}$ $-3 \cdot -3$	18. $2x^2 + 6x + 3$ $x^2 + 6x + 6$ NOT FACTORABLE $\frac{6}{6}$

↓

Choose 5

<p>19. Which of the following correctly factors out the greatest common factor of $5x^3 + 20x$?</p> <p>a) $5(x^2 + 4)$ <input checked="" type="radio"/> b) $5x(x^2 + 4)$ c) $5(x^3 + 4x)$ d) $5x(x^3 + 4x)$</p>	<p>20. What is the correct factorization of $x^2 - 2x - 24$?</p> <p>a) $(x - 4)(x - 6)$ b) $(x - 2)(x + 12)$ <input checked="" type="radio"/> c) $(x + 4)(x - 6)$ d) $(x - 4)(x + 6)$</p>	<p>21. Which value of b would make $x^2 + bx - 20$ factorable?</p> <p><input checked="" type="radio"/> a) 8 b) 4 c) 10 d) 2</p> 
<p>22. The area of a rectangle is $3x^2 - 10x + 7$. The width is $3x - 7$. What is the length of the rectangle?</p> <p>a) $(x + 1)$ b) $(x - 7)$ c) $(x + 3)$ <input checked="" type="radio"/> d) $(x - 1)$</p>	<p>23. Determine whether $x^2 - 36$ is a difference of two squares. If so, choose the correct factorization.</p> <p>a) No b) Yes; $(x - 6)^2$ <input checked="" type="radio"/> c) Yes; $(x - 6)(x + 6)$ d) Yes; $(x + 6)^2$</p>	<p>24. When multiplied, which of the following gives you $x^2 + 2x - 3$?</p> <p><input checked="" type="radio"/> a) $(x + 3)(x - 1)$ b) $(x - 3)(x + 1)$ c) $(x + 3)(x + 1)$ d) $(x - 3)(x - 1)$</p>
<p>25. Which expression is a factor of $2x^2 - x - 1$?</p> <p>$(x - 1)x$</p> <p><input checked="" type="radio"/> a) $2x - 1$ b) $2x + 1$ c) $x + 2$ d) $x - 2$</p>	<p>26. What type of equations do we factor?</p> <p>quadratic</p>	<p>27. Write an example of an expression that would be factored using <i>both</i> GCF and difference of perfect squares.</p> <p>$2(x^2 - 16)$ $2x^2 - 32$</p>

Factor each expression completely.

1. $7x^2 + 49$	2. $x^2 - 11x$	3. $3x^2 + 21x$
4. $4x^2 - 36$	5. $x^2 - 100$	6. $9x^2 - 4$

Ice
Pract

7. $x^2 - 121$	8. $4x^2 - 1$	9. $49x^2 - 25$
10. $25x^2 - 9$	11. $2x^2 - 8$	12. $2x^2 - 98$
13. $x^2 + 5x + 4$	14. $x^2 - 21x - 22$	15. $x^2 + 13x + 40$
16. $x^2 + 34x - 72$	17. $x^2 + 10x - 11$	18. $x^2 - 14x + 24$
19. $x^2 + 8x + 12$	20. $x^2 + 5x - 24$	21. $x^2 + 7x - 30$
22. $x^2 - 3x - 54$	23. $x^2 - x - 72$	24. $x^2 + 17x + 16$
25. $x^2 + 6x - 40$	26. $x^2 + 21x + 98$	27. $x^2 + 20x + 84$
28. $x^2 + 2x - 63$	29. $x^2 + 18x + 77$	30. $x^2 - 2x - 35$
31. $5x^2 + 4x - 12$	32. $2x^2 - 5x - 7$	33. $2x^2 + 13x + 15$
34. $3x^2 - 7x - 6$	35. $3x^2 + 16x + 21$	36. $4x^2 - 4x - 15$
37. $4x^2 + 12x + 9$	38. $2x^2 - 9x + 4$	39. $10x^2 - 17x + 3$
40. $2x^2 - 5x - 3$	41. $4x^2 - 5x - 6$	42. $2x^2 - 10x - 28$

March 15, 2019, Friday

Factor completely, if possible...

$$2x^2 + 4x - 30 =$$

$$x^4 + 5x^2 + 4 =$$

$$x^4 - y^4 =$$

Factor the common factor out of each expression. Circle your final answer.

1) $20r^6 + 8r^2$

2) $40n^2 + 40n + 56$

Factor each completely.

3) $25p^2 - 4$

4) $a^2 - 3a - 28$

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

6) $r^2 - 1$

7) $3n^2 + 19n - 40$

8) $9x^2 - 38x + 8$

9) $5a^2 + 6a - 8$

10) $9n^2 - 46n + 5$

<p>19. Which of the following correctly factors out the greatest common factor of $5x^3 + 20x$?</p> <p>a) $5(x^2 + 4)$ b) $5x(x^2 + 4)$ c) $5(x^3 + 4x)$ d) $5x(x^3 + 4x)$</p>	<p>20. What is the correct factorization of $x^2 - 2x - 24$?</p> <p>a) $(x - 4)(x - 6)$ b) $(x - 2)(x + 12)$ c) $(x + 4)(x - 6)$ d) $(x - 4)(x + 6)$</p>	<p>21. Which value of b would make $x^2 + bx - 20$ factorable?</p> <p>a) 8 b) 4 c) 10 d) 2</p>
<p>22. The area of a rectangle is $3x^2 - 10x + 7$. The width is $3x - 7$. What is the length of the rectangle?</p> <p>a) $(x + 1)$ b) $(x - 7)$ c) $(x + 3)$ d) $(x - 1)$</p>	<p>23. Determine whether $x^2 - 36$ is a difference of two squares. If so, choose the correct factorization.</p> <p>a) No b) Yes; $(x - 6)^2$ c) Yes; $(x - 6)(x + 6)$ d) Yes; $(x + 6)^2$</p>	<p>24. When multiplied, which of the following gives you $x^2 + 2x - 3$?</p> <p>a) $(x + 3)(x - 1)$ b) $(x - 3)(x + 1)$ c) $(x + 3)(x + 1)$ d) $(x - 3)(x - 1)$</p>
<p>25. Which expression is a factor of $2x^2 - x - 1$?</p> <p>a) $2x - 1$ b) $2x + 1$ c) $x + 2$ d) $x - 2$</p>	<p>26. What type of equations do we factor?</p>	<p>27. Write an example of an expression that would be factored using both GCF and difference of perfect squares.</p>