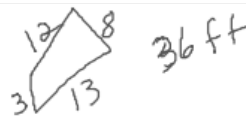


Intergrated Algebra Regents Exam

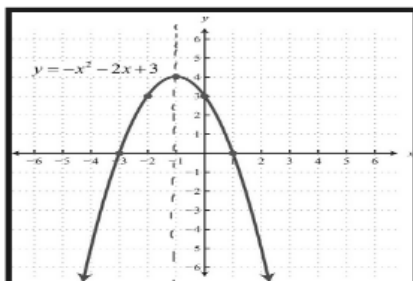
When: Friday, June 20

8: 8:15



- 1) Pythagorean theorem $a^2 + b^2 = c^2$
- 2) Area of a rectangle $l \cdot w$ Perimeter of a polygon the sum of all sides
- 3) Volume of a prism $l \cdot w \cdot h$ Relative error _____
- 4) Slope formula on reference page $\frac{y_2 - y_1}{x_2 - x_1}$ difference
actual
- 5) Parallel lines have same slopes but different y-intercepts
ex. Is $y = 3x - 9$ parallel to $y = 3x + 4$ parallel yes
- 6) Proper form for a linear function is $y = mx + b$, put $y - 3x = 12$ into proper form $y = 3x + 12$

Parabola:



- Vertex midpoint of parabola (-1, 4)
- Roots parabola meets x-axis → 1 and -3
- Axis of symmetry vertical line through
x-axis → $x = -1$

- 7) Exponential growth (hint: a, r, t) $y = a(1+r)^t$ Exponential decay $y = a(1-r)^t$

8) Give an example of each property:

- a) commutative $2+a = a+2$
- b) associative $(1+3)+5 = 1+(3+5)$
- c) distributive $a(x+y) = ax+ay$
- d) additive identity $5+0 = 5$
- e) additive inverse $5 + -5 = 0$
- f) multiplicative identity $a \cdot 1 = a$
 $-3 \cdot 1 = -3$

Types of factoring

- a) gcf $3x^2 - 6x$ _____
- b) dots $9x^2 - 100$ _____
- c) abc $x^2 - x - 6$ _____

d) Factor completely (factor more than once, gcf will be first)

ex. $2x^2 + 4x + 2$ **back**

e) Factor trinomial when leading coefficient $\neq 1$

ex. $2x^2 - 3x + 1$ **you tube, then handout.**

$5 \text{ sto } \rightarrow 5$
find match

Factor Completely - gcf first

$$\text{gcf} \quad \frac{2x^2}{2\text{gcf}} + \frac{4x}{2\text{gcf}} + \frac{2}{2\text{gcf}}$$

$$2 \left(\begin{array}{ccc} 1x^2 & 2x & 1 \\ a & b & c \end{array} \right) \begin{array}{l} a=1 \\ b=2 \\ c=1 \end{array}$$

1 + 1 = 2

$$2(x+1)(x+1)$$

Factor Completely - gcf

$$3a^2 - 48 \rightarrow 3(a^2 - 16)$$

$\begin{array}{r} 3a^2 - 48 \\ \underline{-1-48} \\ 2 \quad 24 \\ \underline{-3 \quad 16} \\ 4 \quad 12 \\ \underline{-6 \quad 8} \end{array}$

$\begin{array}{r} 3(a^2 - 16) \\ \underline{a \cdot a} \quad \underline{4 \cdot 4} \\ 3(a+4)(a-4) \end{array}$

Kuta Software - Infinite Algebra 1

Name_____

Factoring Trinomials ($a > 1$)

Date_

Factor each completely.

1) $3p^2 - 2p - 5$

2) $2n^2 + 3n - 9$

3) $3n^2 - 8n + 4$

4) $5n^2 + 19n + 12$

1) $16n^2 - 9$
 $4 \cdot 4 \quad n \cdot n \quad 3 \cdot 3$
 $(4n-3)(4n+3)$

3) $m^2 + m - 90$ $a=1$
 -90 $b=1$
 $-1 \cdot 90$ $c=-90$
 $-2 \cdot 45$ $-9+10=1$
 $-3 \cdot 30$
 $-5 \cdot 18$
 $-6 \cdot 15$
 $-9 \cdot 10$

$(m-9)(m+10)$

gcf $16ab^2 + 24b$
 $4 \cdot 16ab^2 \quad 1 \cdot 24b$
 $2 \cdot 8ab^2 \quad 2 \cdot 12b$
 $3 \cdot 4ab^2 \quad 3 \cdot 8b$
 $4 \cdot 4ab^2 \quad 4 \cdot 6b$
 $4b(4ab + 6)$

factoring types
square - square ✓
abc
gcf

2) $4m^2 - 25$
 $(2m-5)(2m+5)$
 $(5+2m)(5-2m)$

4) $n^2 + 4n - 12$ $a=1$
 $b=4$
 $c=-12$
 $c \quad b$
 $-12 \quad 49$
 $-1 \cdot 12 = 11$
 $-2 \cdot 6 = 4$
 $(n-2)(n+6)$

5) Factored completely, the expression $2y^2 + 12y - 54$ is equivalent to $2y^2 + 12y - 54$
 $1 \cdot 2y^2 \quad +12y \quad -54$
 $2 \cdot 6y \quad -3 \cdot 18$
 $3 \cdot 4y \quad -6 \cdot 9$

$2(y^2 + 6y - 27)$ $a=1$
 $b=6$
 $c=-27$
 $c=-27 \quad b=6$
 $-27 = 27$
 -2
 $-3 + 9 = 6$
 $2(y-3)(y+9)$