Algebra 1 8.8

Factor binomials that are the difference of squares

Use the difference of squares to solve equations

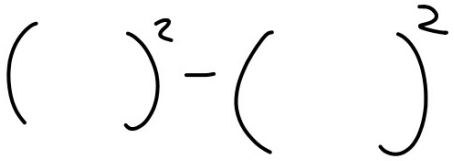
difference

factor

solve

zero product property

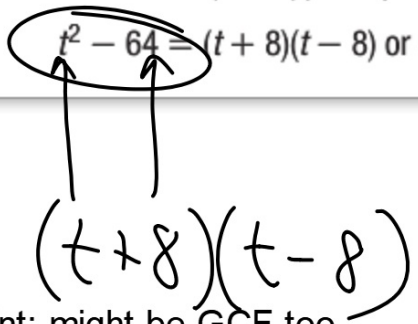
whiteboards



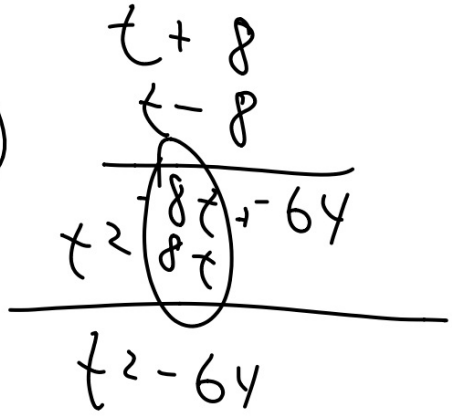
Easter Egg scavenger hunt (if time)

KeyConcept Difference of Squares

Symbols	$a^2 - b^2 = (a + b)(a - b)$ or $(a - b)(a + b)$
Examples	$x^2 - 25 = (x + 5)(x - 5)$ or $(x - 5)(x + 5)$
	$t^2 - 64 = (t + 8)(t - 8)$ or $(t - 8)(t + 8)$



Hint: might be GCF too...



c. $\frac{27g^3}{3g} - \frac{3g}{3g}$

$3g(9g^2 - 1)$

$3g \quad 1$

$3g(3g+1)(3g-1)$

GCF
Is the first thing something squared?
Is the second thing something squared?
Is it a difference?

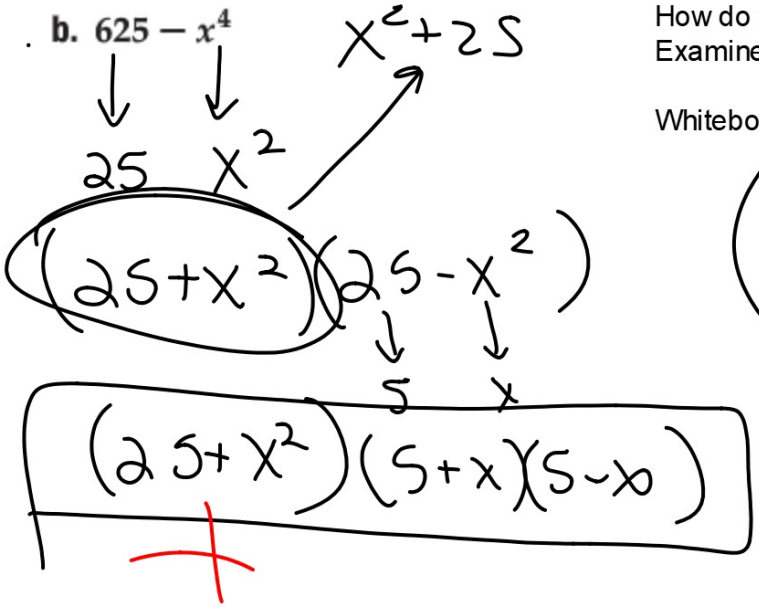
~~Might need to rearrange...~~

$-25 + x^2$

$x^2 - 25$

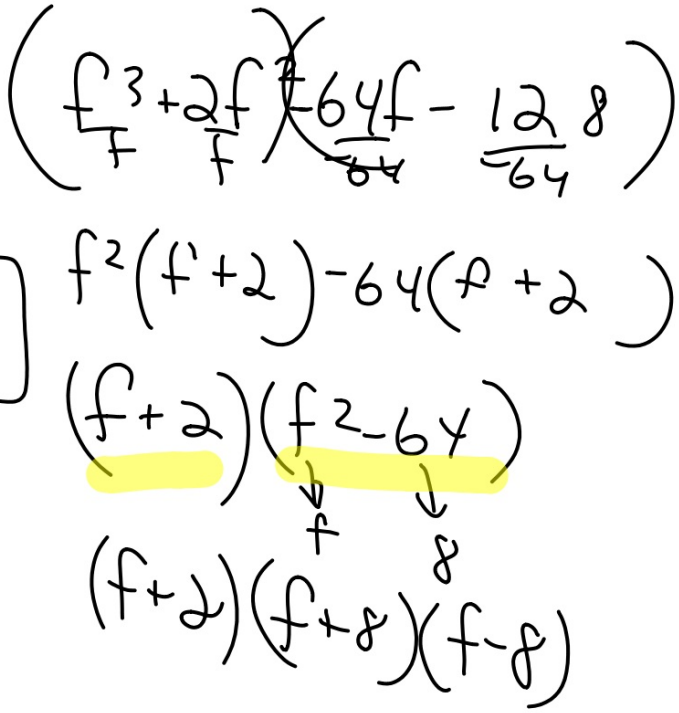
$(x-5)(x+5)$

b. $625 - x^4$



How do you know when you are finished factoring? Examine your answer. Is there another d.o.s.?

Whiteboards



GuidedPractice

2A. $y^4 - 1$

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

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

2B. $4a^4 - b^4$

$2a^2 \quad b^2$

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

Example 3 Apply Different Techniques

Factor each polynomial.

a. $5x^5 - 45x$

$5x(x^4 - 9)$

$x^2 \quad 3$

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

What are some different kinds of factoring?
(Use everything that you know...)
GCF
Factor by grouping
X-factor
Leading coefficient (factor pairs)
Difference of squares

b. $7x^3 + 21x^2 - 7x - 21$

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

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

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

$7(x+1)(x-1)(x+3)$

3C. $2m^3 + m^2 - 50m - 25$

3D. $r^3 + 6r^2 + 11r + 66$

What if it is an equation?

Scavenger hunt...

Zero product property

GuidedPractice

4. Which are the solutions of $18x^3 = 50x$?

Standardized Test Example 4 Solve an Equation by Factoring

In the equation $y = x^2 - \frac{9}{16}$, which is a value of x when $y = 0$?