

Algebra 1 8.8  
 Factor binomials that are the difference of squares  
 Use the difference of squares to solve equations

difference -  
 factor  $x^2 -$   
 solve =  
 zero product property

1. No FMC, will have exit ticket instead  
 Add to HW paper (top?)  
 2. Homework: **class.name.date**  
 Shared folder by class time tomorrow

$$(x+3)(x-1) = 0$$

$\downarrow$   $x-1=0$   
 $x+3=0$   $+1$   
 $-3$   $x=1$   
 $x=-3$

Apr 22-6:49 PM

**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  $(t-8)(t+8)$

$x^2 - 25 = (x-5)(x+5)$   
 Hint: might be GCF too...

$t^2 - 64 = (t-8)(t+8)$

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c.  $27g^3 - 3g$

GCF  
 Is the first thing something squared?  
 Is the second thing something squared?  
 Is it a difference?  
 Might need to rearrange...

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

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

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b.  $625 - x^4$

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

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

$$(25 + x^2)(5+x)(5-x)$$

$-x^2 + 64$   
 $64 - x^2$   
 $(8-x)(8+x)$

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Guided Practice

2A.  $y^4 - 1$   
 $(y^2 - 1)(y^2 + 1)$   
 $(y-1)(y+1)(y^2 + 1)$

2B.  $4a^4 - b^4$   
 $(2a^2 - b^2)(2a^2 + b^2)$

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2C.  $81 - x^4$

2D.  $16y^4 - 1$

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**Example 3 Apply Different Techniques**

Factor each polynomial.

a.  $5x^5 - 45x$

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

*↑ mit Klammern*

Apr 23-8:40 PM

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

Apr 23-8:40 PM

3c.  $(2m^3 + m^2 - 50m - 25)$

$m^2(m+1) - 25(m+1)$   
 $(m+1)(m^2 - 25)$   
 $(m+1)(m+5)(m-5)$

Apr 23-8:40 PM

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

Apr 23-8:40 PM

Zero product property

**Guided Practice**

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

$18x^3 - 50x = 0$   
 $2x(9x^2 - 25) = 0$   
 $2x(3x-5)(3x+5) = 0$

$2x = 0 \rightarrow x = 0$   
 $3x - 5 = 0 \rightarrow 3x = 5 \rightarrow x = 5/3$   
 $3x + 5 = 0 \rightarrow 3x = -5 \rightarrow x = -5/3$

Apr 23-8:41 PM

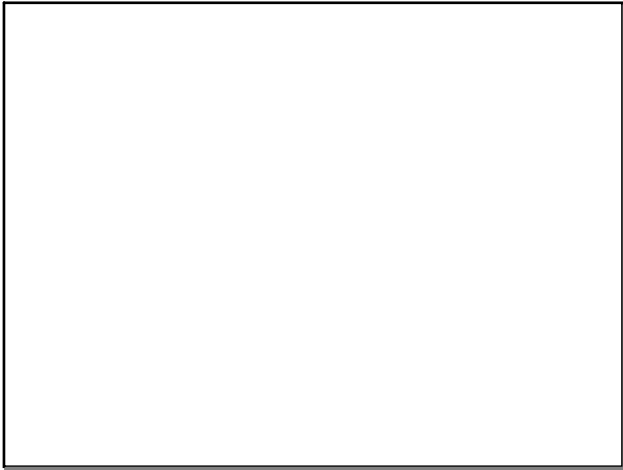
**Standardized Test Example 4 Solve an Equation by Factoring**

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

$0 = (x + \frac{3}{4})(x - \frac{3}{4})$

WB 8.8 skills  
 1-23 odds  
 alg 1. name. maritz  
 1030

Apr 23-8:41 PM



Apr 23-8:39 PM

## Attachments

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Danger, Will Robinson! best.mp4