

Name: Key  
 8A; Algebra I

Date: \_\_\_\_\_  
 Period \_\_\_\_\_

Homework

Factor the following completely

<p>1) <math>4x^2 - 4</math>  <math>4(x^2 - 1)</math> GCMF  <math>4(x+1)(x-1)</math> DOPS</p>	<p>2) <math>st^2 - 9s</math>  <math>s(t^2 - 9)</math> GCMF  <math>s(t+3)(t-3)</math> DOPS</p>	<p>3) <math>3x^2 - 27y^2</math>  <math>3(x^2 - 9y^2)</math> GCMF  <math>3(x+3y)(x-3y)</math> DOPS</p>
<p>4) <math>63c^2 - 7</math>  <math>7(9c^2 - 1)</math> GCMF  <math>7(3c+1)(3c-1)</math> DOPS</p>	<p>5) <math>z^3 - z</math>  <math>z(z^2 - 1)</math> GCMF  <math>z(z+1)(z-1)</math> DOPS</p>	<p>6) <math>x^4 - 1</math>  <math>(x^2 - 1)(x^2 + 1)</math> DOPS  <math>(x+1)(x-1)(x^2 + 1)</math> DOPS</p>
<p>7) <math>\pi c^2 - \pi d^2</math>  <math>\pi(c^2 - d^2)</math> GCMF  <math>\pi(c+d)(c-d)</math> DOPS</p>	<p>8) <math>4r^2 - 4r - 48</math>  <math>4(r^2 - r - 12)</math> GCMF  <math>4(r-4)(r+3)</math> Tri</p>	<p>9) <math>4x^2 - 6x - 4</math>  <math>2(2x^2 - 3x - 2)</math> GCMF  <math>2(\frac{2x-4}{2})(\frac{2x+1}{2})</math> Tricky Tri  <math>2(x-2)(2x+1)</math></p>
<p>10) <math>2ax^2 - 2ax - 12a</math>  <math>2a(x^2 - x - 6)</math> GCMF  <math>2a(x-3)(x+2)</math> Tri</p>	<p>11) <math>a^4 - 10a^2 + 9</math>  <math>(a^2 - 9)(a^2 - 1)</math> Tri  <math>(a+3)(a-3)(a+1)(a-1)</math> DOPS</p>	<p>12) <math>5x^4 + 10x^2 + 5</math>  <math>5(x^4 + 2x^2 + 1)</math> GCMF  <math>5(x^2 + 1)(x^2 + 1)</math> Tri  OR  <math>5(x^2 + 1)^2</math></p>

★ 13) The volume of a rectangular solid is represented by  $12a^3 - 5a^2b + 2ab^2$ . Find the algebraic expressions that could represent the dimensions of the solid.

$V = L \cdot W \cdot H$

$a(12a^2 - 5ab - 2b^2) - 24b^2$  GCMF  
 $a(\frac{12a}{4} - \frac{5b}{4})(\frac{12a+3b}{3})$  Tricky Tri  
 $a(3a - 2b)(4a + b)$

★ 14) Mike said that since  $4a^2 - a^2b^2$  is the difference of two squares, the factors are  $(2a + ab)(2a - ab)$ . Has Mike factored  $4a^2 - a^2b^2$  into prime polynomial factors? Explain why or why not.

Mike has not factored  $4a^2 - a^2b^2$  into prime polynomials B/c he did not factor out the GCMF first  
 $a^2(4 - b^2)$  GCMF  
 $a^2(2+b)(2-b)$  DOPS