Math 105, Precalculus
Quiz 1, sections 1.1 and 1.3

Name ANSWER KEY A
September 3, 2009

Show all work neatly. Use of calculators is NOT permitted.

1. Let $A = \{j,k,l,m,n,o\}$ and $B = \{k, m,o,q,s\}$. Find the following:

3 pts (1½ each)

a) $A \cap B = \{k, m, o\}$
↑ intersection (elements in common)

b) $A \cup B = \{j, k, l, m, n, o, q, s\}$
↑ union

2. Factor out the greatest common factor: $-6a^3b^2 + 12a^2b + 18a^4b^3 =$

3 pts.

$6a^2b(-ab + 2 + 3a^2b^2)$ OR $-6a^2b(ab - 2 - 3a^2b^2)$ } either is fine

3. Factor each of the following expressions completely:

3 pts.

a) $x^2 - 7x + 12 = (x-3)(x-4)$

3 pts.

b) $t^3 + 8t^2 - 9t = t(t^2 + 8t - 9)$
$= t(t+9)(t-1)$

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Name ANSWER KEY, B
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Show all work neatly. Use of calculators is NOT permitted.

1. Let $A = \{a,b,c,d,e,f\}$ and $B = \{a, c,e,g,i\}$. Find the following:

   a) $A \cup B$ $\{a, b, c, d, e, f, g, i\}$

   b) $A \cap B$ $\{a, c, e\}$

2. Factor out the greatest common factor: $-5x^5y^3 + 15x^2y^2 + 20xy^4$ 5

   $= 5xy^2(-x^4y + 3x + 4y^2)$

   $= -5xy^2(x^4y - 3x - 4y^2)$ or (either is fine)

3. Factor each of the following expressions completely:

   a) $t^2 - 9t + 18 = (t-6)(t-3)$

   b) $x^3 + 7x^2 - 8x = x(x^2 + 7x - 8)$

   $= x(x+8)(x-1)$