

Name: KEY

Read all directions and problems carefully! Show all appropriate work for credit.

1. Factor the following polynomials by removing the greatest common factor.

$$-35x^4 + 21x^3y^3 - 28x^2y^2$$

$$7xy^2(-5y^2 + 3x^2y - 4x)$$

(+1)

$$90a^3b^3c^3 - 75a^5bc^3$$

$$15a^3bc^3(6b^2 - 5a^2)$$

(+1)

2. Factor the following polynomial by grouping.

$$8x^2 + 6xy + 20x + 15y$$

$$2x(4x+3y) + 5(4x+3y)$$

$$(4x+3y)(2x+5)$$

(+1)

$$3a^2 - 6ab - 2a + 4b$$

$$3a(a-2b) - 2(a-2b)$$

$$(a-2b)(3a-2)$$

(+1)

3. Factor the following trinomials completely.

$$x^2 - 19x + 48$$

$$(x-16)(x-3)$$

$\begin{array}{r} 48 \quad + \\ -19 \\ \hline -16(-3) \quad -16(+3) \end{array}$

(+1)

$$x^2 - 2xy - 63y^2$$

$$(x-9y)(x+7y)$$

$\begin{array}{r} -63 \quad + \\ -2 \\ \hline -9(7) \end{array}$

(+2)

$$12b^2 + 11b - 15$$

$$12b^2 + 20b - 9b - 15$$

$$4b(3b+5) - 3(3b+5)$$

$$(3b+5)(4b-3)$$

$\begin{array}{r} -180 \quad + \\ \hline -9(20) \quad -9(+20) \end{array}$

(+2)

4. Factor the following binomials completely.

$$64n^2 - 25$$

$$(8n-5)(8n+5)$$

(+1)

$$t^3 + 27$$

$$(t+3)(t^2-3t+9)$$

$t^3 + 3^3$

(+2)

$$16a^4 - 81$$

$$(4a^2)^2 - 9^2$$

$$(4a^2-9)(4a^2+9)$$

$$(2a-3)(2a+3)(4a^2+9)$$

(+3)

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