

Name: KEY
Date: _____

Factoring Practice Test

1) Simplify

a) $(w+5)(w+3)$

$$w^2 + 3w + 5w + 15$$

$$w^2 + 8w + 15$$

b) $(x-6)(x-2)$

$$x^2 - 2x - 6x + 12$$

$$x^2 - 8x + 12$$

c) $(y+4)(y-9)$

$$y^2 - 9y + 4y - 36$$

$$y^2 - 5y - 36$$

d) $(p+3)(p-3)$

$$p^2 - 3p + 3p - 9$$

$$p^2 - 9$$

e) $(2a+3)(a-2)$

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

$$2a^2 - a - 6$$

f) $(5-y)(-3+3y)$

$$-15 + 15y + 3y - 3y^2$$

$$-3y^2 + 18y - 15$$

g) $(x-1)(x+2) - (x-4)(x-3)$

$$x^2 + 2x - x - 2 - [x^2 - 3x - 4x + 12]$$

$$x^2 + x - 2 - [x^2 - 7x + 12]$$

$$x^2 + x - 2 - x^2 + 7x - 12 = 8x - 14$$

h) $-3(m+2)(m-5)$

$$-3[m^2 - 5m + 2m - 10]$$

$$-3[m^2 - 3m - 10]$$

$$-3m^2 + 9m + 30$$

i) $(t+3)(t^2-t+6)$

$$t^3 - t^2 + 6t + 3t^2 - 3t + 18$$

$$t^3 + 2t^2 + 3t + 18$$

2) Factor

a) $12r - 20$

$$4(3r - 5)$$

b) $-10x - 30$

$$-10(x + 3)$$

c) $8y^2 - 12y - 4$

$$4(2y^2 - 3y - 1)$$

d) $24x^4y^3z^5 - 28x^3y^4z^3 + 16x^2y^5z^4$

$$4x^2y^3z^3(6x^2z^2 - 7xy + 4y^2z)$$

e) $x^2 + 8x + 7$

$$(x+7)(x+1)$$

f) $y^2 - 9y - 22$

$$(y-11)(y+2)$$

g) $-w - 12 + w^2$

$$w^2 - w - 12$$

$$(w-4)(w+3)$$

h) $-2t^2 - 10t + 28$

$$-2(t^2 + 5t - 14)$$

$$-2(t+7)(t-2)$$

3) Factor

a) $m^2 - 6mn + 9n^2$

$$(m-3n)(m-3n)$$

$$(m-3n)^2$$

b) $3x^2 + 9xy - 30y^2$

$$3(x^2 + 3xy - 10y^2)$$

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

c) $8x - x^2 + 20$

$$-x^2 + 8x + 20$$

$$-1(x^2 - 8x - 20)$$

$$-(x-10)(x+2)$$

d) $p^2 + 16p + 64$

$$(p+8)(p+8)$$

$$(p+8)^2$$

e) $-49 + w^2 - 14w$

$$w^2 - 14w - 49$$

cannot factor

f) $2n^2 - 12n + 18$

$$2(n^2 - 6n + 9)$$

$$2(n-3)(n-3)$$

$$2(n-3)^2$$

g) $y^2 - 1$

$$(y+1)(y-1)$$

h) $w^2 - 9$

$$(w+3)(w-3)$$

i) $5x^2 + 20$

$$5(x^2 + 4)$$

j) $8t^2 - 32$

$$8(t^2 - 4)$$

$$8(t+2)(t-2)$$

k) $4p^2 - 81q^2$

$$(2p+9q)(2p-9q)$$

l) $-27b^2 + 48a^2$

$$-3(9b^2 - 16a^2)$$

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