

**Quiz – Expanding Binomial Multiplication  
and Common Factoring**

**1. Expand and simplify the following expressions.**

a)  $(x+3)(x+5)$

$$= x^2 + 5x + 3x + 15$$
$$= x^2 + 8x + 15$$

b)  $(x-1)(x+4)$

$$= x^2 + 4x - 1x - 4$$
$$= x^2 + 3x - 4$$

c)  $(x-4)^2$

$$= (x-4)(x-4)$$
$$= x^2 - 4x - 4x + 16$$
$$= x^2 - 8x + 16$$

d)  $2(x-3)(x+6)$

$$= 2(x^2 + 6x - 3x - 18)$$
$$= 2(x^2 + 3x - 18)$$
$$= 2x^2 + 6x - 36$$

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

$$= 4(x+5)(x+5)$$
$$= 4(x^2 + 5x + 5x + 25)$$
$$= 4(x^2 + 10x + 25)$$
$$= 4x^2 + 40x + 100$$

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

$$= (x-2)(x-2) + 5$$
$$= x^2 - 2x - 2x + 4 + 5$$
$$= x^2 - 4x + 9$$

**2. Common factor each expression.**

a)  $5x+10$

$$= 5(x+2)$$

b)  $9x^2 - 18x$

$$= 9x(x-2)$$

c)  $4x^2 + 20x - 8$

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

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c)  $(x-4)^2$

d)  $2(x-3)(x+6)$

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

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

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a)  $5x+10$

b)  $9x^2 - 18x$

c)  $4x^2 + 20x - 8$