Name:_____   Date:_____

Math 9 HW: Section 5.6 Multiplying Polynomials:

1. Simplify each of the following expressions:

a) $3abc\left(8ab^4c\right)$	b) $\left(-13ab^3c\right)\left(-2a^3\right)\left(9bc^3\right)$	c) $8ab\left(12-3a+7ac\right)$
d) $6abc\left(2a+4b-7\right)$	e) $12ab^3\left(1+2a^2b^3-3a\right)$	f) $2a^2b\left(15ac^2-bc\right)$
g) $-4a^2b\left(2a+4bc\right)$	h) $4abc^3\left(9a^2-3b^2c\right)$	i) $-3ac\left(3a^3+4a^2b-12c\right)$
j) $\dfrac{3x^2y^2-9xy+12x}{3x}$	k) $\dfrac{3x^2y^2-9xy+12x}{3x}$	l) $\dfrac{3x^2y^2-9xy+12x}{3x}$
m) $\dfrac{18ab-36a^3b}{9ab}$	n) $\dfrac{20ab-16b}{4b}$	o) $\dfrac{3ab^2-12ab^3}{3ab}$
p) $\dfrac{3x^2y^2-9xy+12x}{3x}$	q) $\dfrac{-24x^3y-16x^2y-12y^3x}{4xy}$	r) $\dfrac{-15x^3y^2z-20x^3y+35y^3x^3}{5x^2}$

2. Simplify each of the following expressions:

a) $(a+3)(2a-1)$	b) $(4+2x)(3-2x)$	c) $(6-2a)(5+3a)$
d) $(3a+1)(2a-7)$	e) $(3-4a)(1+2a)$	f) $(1+11a)(15a-1)$

g) $(2x-3)(3x+1)-(3x+2)$	h) $(x+1)(2x-1)-3(x+1)$
i) $(x+1)(2x+1)-(x+3)(x+2)$	j) $(x-3)(x+1)+(x+2)(x-3)$

3. Find the area of the shaded region for each of the following diagrams:

$x+2$

$2x+3$

$x+3$

$3x+4$

$2x-1$

$3x-7$

$x+1$

$x+4$