2.2 – 2.3 Review Worksheet

Name: _____

Show your work.

1. Expand each expression and simplify

a) $3a^2b^3(5a^3b^5c^2)$

$15a^5b^8c^2$

b) $(r-2)(r+9)$

$= r(r) + r(9) - 2(r) - 2(9)$

$= r^2 + 9r - 2r - 18$

$= r^2 + 7r - 18$

c) $(y-3)(y+7)$

$= y(y) + y(7) - 3(y) - 3(7)$

$= y^2 + 7y - 3y - 21$

$= y^2 + 4y - 21$

d) $(11+f)(6-f)$

$= 11(6) + 11(-f) + f(6) + f(-f)$

$= 66 - 11f + 6f - f^2$

$= -f^2 - 5f + 66$

e) $2(2x-3y)(4x+7y)$

$= 2[2x(4x) + 2x(7y) - 3y(4x) - 3y(7y)]$

$= 2[8x^2 + 14xy - 12xy - 21y^2]$

$= 2[8x^2 + 2xy - 21y^2]$

$= 16x^2 + 4xy - 42y^2$

f) $(2x+9)(3x-2)$

$= 2x(3x) + 2x(-2) + 9(3x) + 9(-2)$

$= 6x^2 - 4x + 27x - 18$

$= 6x^2 + 23x - 18$

g) $(3x+4)^2$

$= (3x+4)(3x+4)$

$= 3x(3x) + 3x(4) + 4(3x) + 4(4)$

$= 9x^2 + 12x + 12x + 16$

$= 9x^2 + 24x + 16$

h) $(2x-5)^2$

$= (2x-5)(2x-5)$

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

$= 4x^2 - 10x - 10x + 25$

$= 4x^2 - 20x + 25$

i) $x + 2(x^2 - 3x + 2)$

$= x + 2(x^2) + 2(-3x) + 2(2)$

$= x + 2x^2 - 6x + 4$

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

j) $5 - 4y(6 + 4y - 2y^2)$

$= 5 - 4y(6) - 4y(4y) - 4y(-2y^2)$

$= 5 - 24y - 16y^2 + 8y^3$

$= 8y^3 - 16y^2 - 24y + 5$

k) $(5x + 1)(4x + 2) + 2(x - 5)(2x - 1)$

$= 5x(4x) + 5x(2) + 1(4x) + 1(2) + [2(x) + 2(-5)](2x - 1)$

$= 20x^2 + 10x + 4x + 2 + (2x - 10)(2x - 1)$

$= 20x^2 + 14x + 2 + 2x(2x) + 2x(-1) - 10(2x) - 10(-1)$

$= 20x^2 + 14x + 2 + 4x^2 - 2x - 20x + 10$

$= 24x^2 - 8x + 12$

l) $(6x - 2)(4x + 2) - (x + 7)^2$

$= (6x - 2)(4x + 2) - (x + 7)(x + 7)$

$= 6x(4x) + 6x(2) - 2(4x) - 2(2) - [x(x) + x(7) + 7(x) + 7(7)]$

$= 24x^2 + 12x - 8x - 4 - [x^2 + 7x + 7x + 49]$

$= 24x^2 + 4x - 4 - x^2 - 14x - 49$

$= 23x^2 - 10x - 53$

2. Find the error(s) in the multiplication. Write the correct solution.

$(3g^2 + 4g - 2)(-g^2 - g + 4)$

$= -3g^4 - 3g^3 + 12g^2 - 4g^3 + 4g^2 + 8g + 2g^2 + 2g + 8$

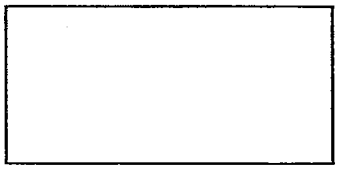
$= -3g^4 + 5g^3 + 6g^2 + 10g + 8$

$= -3g^4 + 3g^3 + 12g^2 - 4g^3 - 4g^2 + 16g + 2g^2 + 2g - 8$

$= -3g^4 - 7g^3 + 10g^2 + 18g - 8$

3. Determine the area of the rectangle

Area = (length)(width)



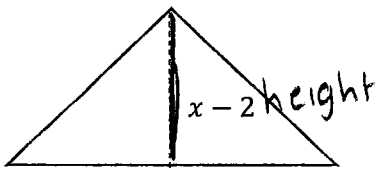
$Area = (2x-3)(x+5)$

$Area = 2x^2 + 10x - 3x - 15$

$Area = 2x^2 + 7x - 15$

4. Determine the area of the triangle

Area = $\frac{1}{2}(base)(height)$



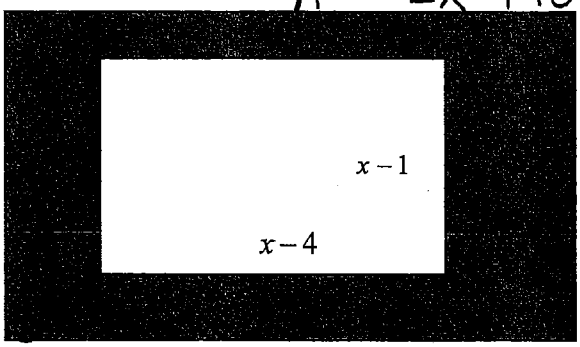
$Area = \frac{1}{2}(4x-6)(x-2)$

$= (2x-3)(x-2)$

$= 2x^2 - 4x - 3x + 6$

$= 2x^2 - 7x + 6$

5. Each figure is a rectangle. Find a polynomial that represents the shaded area.



$A = (2x+7)(x+5) - (x-4)(x-1)$

$A = 2x^2 + 10x + 7x + 35 - (x^2 - x - 4x + 4)$

$A = 2x^2 + 17x + 35 - 1(x^2 - 5x + 4)$

$A = 2x^2 + 17x + 35 - x^2 + 5x - 4$

$A = x^2 + 22x + 31$