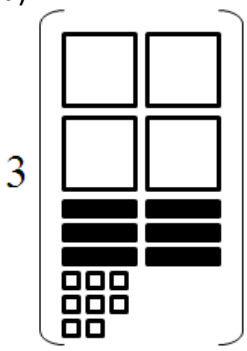
Math 9 **Chapter 5.5 – Multiplying Polynomials** **Date:** _____

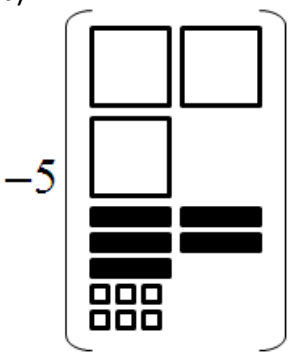
Name: _____ **Period:** _____

1. Write the polynomial difference modelled by each set of tiles.

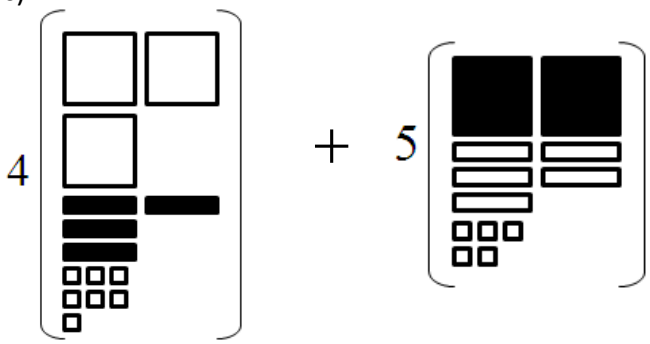
a)



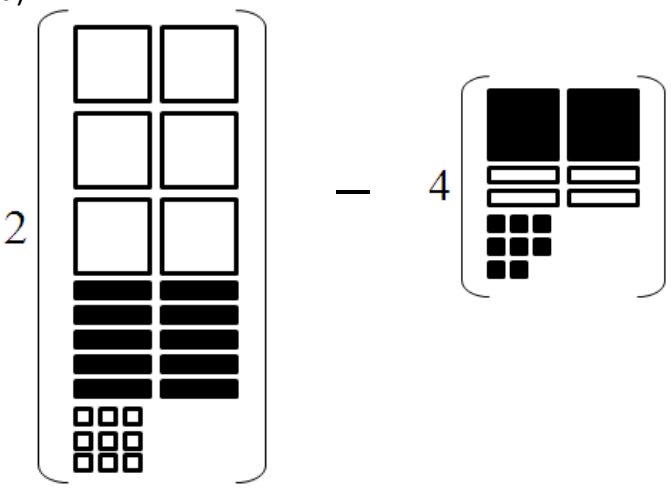
b)



c)



d)



2. Multiply.

a) $2\left(4x^2+8x+3\right)$	b) $-3\left(6x^2-7x+4\right)$
c) $2\left(-3x^2+9x-11\right)$	d) $-5\left(-7x^2+4x-6\right)$

3. Simplify.

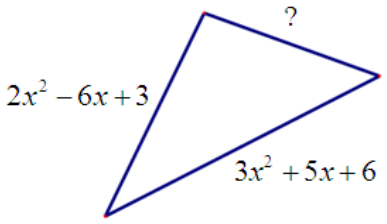
a) $\left(3x+2\right)+5\left(-2x+5\right)$	b) $3\left(x+2\right)+\left(3x^2+5x-1\right)$
c) $5\left(-2x^2+3x-6\right)+7\left(x^2+4x+3\right)$	d) $\left(-9x+5x^2-4\right)+4\left(3-4x^2+8x\right)$
e) $6\left(4x-11x^2+12\right)-5\left(15-8x-9x^2\right)$	f) $5\left(2x^2-3xy+4y^2\right)-7\left(-2xy+5x^2-y^2\right)$
g) $8\left(-6x^3-5x^2\right)-5\left(x^3+7x^2+9x\right)+\left(12x^3+4x^2+10x\right)$	
h) $12\left(x^2y-5xy-4y\right)+5\left(7x^2y+5y-10xy\right)-8\left(-2xy+4x^2y\right)$	

i) $3\left(10x^2y-8xy^2-5xy+12x\right)-4\left(-7x+9x^2y-15y^2x-4yx\right)-5\left(-xy+10yx^2\right)$

4. Determine the answer to each of the following.

a) $9x\left(x+5\right)-7\left(4-7x\right)$	b) $-2x\left(3x-y\right)-x\left(x+4y\right)$
c) $9x\left(2xy+3x+5y\right)-4\left(7xy-3x-6y\right)$	
d) $-3x\left(x+4y\right)+2\left(x^2-3y\right)-5y\left(x^2-x\right)$	
e) $-5x\left(xy+y+3\right)+6y\left(x-y-2\right)-8xy\left(x+2\right)$	

5. The perimeter of a triangle is $6x^2+7x-12$. Find the missing side.

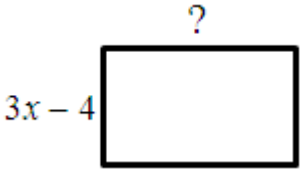


6. The perimeter of a triangle is $12y-8z$. Two sides are $3y+5z$ and $2y$. What is the other side?

7. The perimeter of a triangle is $7x^2-5x+8$. Two sides are $4x+3$ and $3x^2+7x-3$. What is the other side?

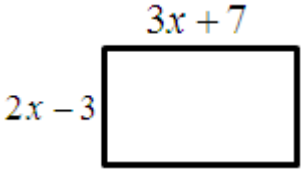
8. If the side length of a square is $3m-2$, then find the perimeter of the square.

9. The perimeter of a rectangle is $24x+15$ and the width is $3x-4$. What is the length?



10. The perimeter of a rectangle is $15y+8x$ and the length is $3x-5y$. What is the width?

11. If the length of this rectangle is increased by two and the width is decreased by five, then determine the new expression for the perimeter.



12. If the length of this rectangle is doubled and the width tripled, then determine the new expression for the perimeter.