Polynomials (Part 2): Multiplying

First & Last Name: _____ **Class:** _____

If you did not get full points on the *Polynomials* section of the "Pre-Review" test, attempt all of the (non-challenge) questions on this handout. Check your answers using the answer key. If you did not get a correct answer, use Khan Academy to review and master the topic.
Honor Students: you are expected to master the challenge questions.

Section 1: Multiply monomials intro (KA link)

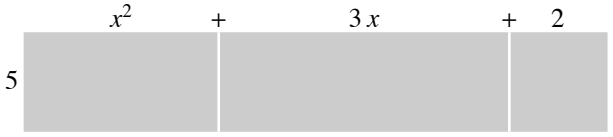
1. Multiply (your answer should be a monomial in standard form).
   a. $(8\,h^4)\,(2\,h^5)$
   b. $(q^7)\,(-3\,q^2)$
   c. $(-3\,x^4)\,(4\,x^3)$

Section 2: Multiply monomials (KA link)

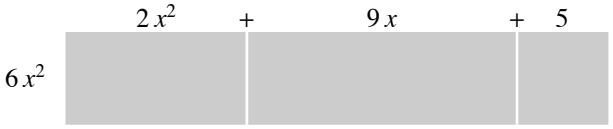
1. Find the values for c and d that would make the following equation true: $(c\,x^4)\,(7\,x^d) = 21\,x^8$.
2. Express the area of a rectangle with length $5\,p^3\,q$ and width $3\,q^3$ as a monomial.
3. Multiply $(a^5\,b^3)\,(-4\,a^2\,b^3)$.
4. [Challenge] Multiply $(a\,p^w\,q^x)\,(b\,p^y\,q^z)$.

Section 3: Multiply monomials by polynomials: area model (KA link)

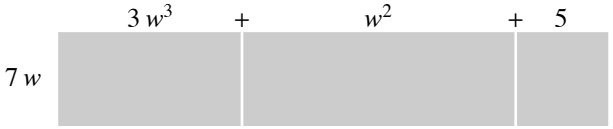
1. Express the area of the entire rectangle (your answer should be a polynomial in standard form).



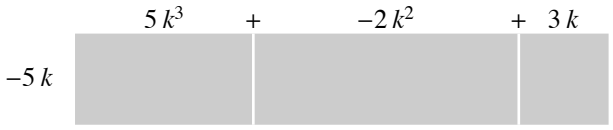
2. Express the area of the entire rectangle (your answer should be a polynomial in standard form).



3. Express the area of the entire rectangle (your answer should be a polynomial in standard form).



4. [Challenge] Express the area of the entire rectangle (your answer should be a polynomial in standard form).



Section 4: Multiply monomials by polynomials (KA link)

1. Expand (your answer should be a polynomial in standard form).
   a. $q(-q^4 + 2\,q^3 - q)$
   b. $-m^3(m^2 - 5\,m + 7)$
   c. $-3\,h^2(h^4 - 7\,h)$

Section 5: Multiply monomials by polynomials challenge (KA link)

1. Expand (your answer should be a polynomial in standard form).
   a. $5\,(p^2 + 3\,p\,q + q^2)$
   b. $-4\,g^5(5\,h + 3\,g\,h - 7\,g^2)$
2. Find the values for a and b that would make the equality true.
   a. $-3\,(3\,m^3 + 5\,m + b) = a\,m^3 - 15\,m - 45$
   b. $5\,a\left(\frac{1}{2}\,x^2\,y + b\,x\,y - 3\,y^2\right) = 10\,x^2\,y - 10\,x\,y - 60\,y^2$