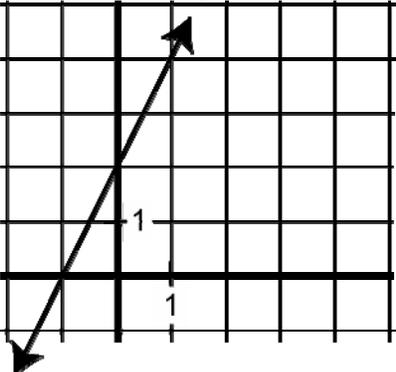
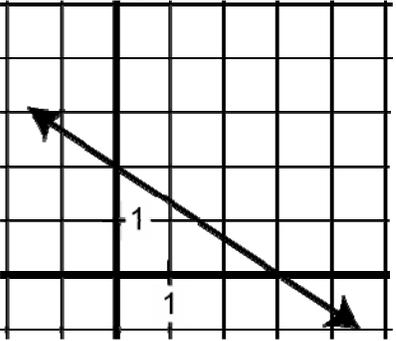


Diagnostic Questions for Math 116
NAME:

Below in the left column are assorted prerequisite problems. These are problems that you have studied and are expected to know coming into Intermediate algebra. Complete each problem as best as you can. To help jog your memory a bit, the right column has similar (but completed) problems. Refer to them as you need.

Do not spend too much time on any one problem. There will be no grade associated with this activity. The purpose is to determine some of the basic algebra skills or concepts that you may need to review before encountering Math 116 topics that use these same skills or concepts. This exercise in no way represents all of the prerequisite skills necessary in Math 116.

Problem	Sample problem (Consult if you do not remember how to do the problem on the left)
1. Simplify $4y - 7xy + 5xy + y$	Simplify by adding like terms: $3x + 4x^2 + 5x - x^2$ $3x + 4x^2 + 5x - x^2 = 3x^2 + 8x$
2. Simplify $10n^3 \cdot 2n^4$	Simplify $3x \cdot 4x^2$ $3x \cdot 4x^2 = 12x^3$
3. Simplify $(3y^4)^2$	Simplify $(5x^2)^3$ $(5x^2)^3 = 5^3 \cdot (x^2)^3 = 125x^6$
4. Simplify $\frac{12x^{15}}{4x^5}$	Simplify $\frac{8n^8}{2n^2}$ $\frac{8n^8}{2n^2} = 4n^6$
5. Rewrite using all positive exponents: $7m^{-3}n^5$	Rewrite without using a negative exponent: $8x^2y^{-5}$ $8x^2y^{-5} = 8x^2 \cdot \frac{1}{y^5} = \frac{8x^2}{y^5}$
6. Distribute: $4n^2(5n^6 - 3)$	Apply the distributive property: $-5x^3(3x^2 - 2)$ $-5x^3(3x^2 - 2) = -15x^5 + 10x^3$

<p>7. Multiply: $(5a - 2)(3a + 1)$</p>	<p>Multiply these binomials: $(2x + 7)(x - 3)$</p> $(2x + 7)(x - 3) = 2x^2 - 6x + 7x - 21$ $= 2x^2 + x - 21$
<p>8. Solve $2x - 7 = -20$</p>	<p>Solve the equation $-3x + 5 = 18$.</p> $-3x + 5 = 18$ $-3x + 5 - 5 = 18 - 5$ $\frac{-3x}{-3} = \frac{13}{-3}$ $x = -\frac{13}{3} \text{ or } -4\frac{1}{3}$
<p>9. Let $f(x) = 3x - 4$. Find $f(-3)$.</p>	<p>Let $f(x) = 5x - 2$. Find $f(-2)$.</p> $f(-2) = 5(-2) - 2$ $= -10 - 2$ $= -12$
<p>10. Simplify $(5x)^2 * (3x^3)$</p>	<p>Simplify $(4x)^3 * (2x^5)$</p> $(4x)^3 * (2x^5)$ $= 4^3 x^3 * 2x^5$ $= 64 * 2 * x^3 x^5$ $= 128x^8$
<p>11. Evaluate $b^2 - 4ac$ for $a = 2$, $b = 3$, and $c = -3$.</p>	<p>Evaluate $b^2 - 4ac$ for $a = 1$, $b = -4$, and $c = 2$.</p> $b^2 - 4ac$ $= (-4)^2 - 4 * 1 * 2$ $= 16 - 8$ $= 8$
<p>12. Find the slope of the line drawn below.</p> 	<p>Find the slope of the line drawn below.</p>  $m = \frac{\text{rise}}{\text{run}}$ $= \frac{-2}{3}$