Quiz 4 **Name:** Mr. Pizza
Total Points possible: 10
Math 12: Spring 2025

Instructions: Each question is worth 3 points but the last question. Question 3 is worth 1 point. **Show all your work in order to receive credit**.

Problem 1. Is the following true or false? Show or explain your result.

(a) $(x+y)^2 = x^2+y^2$

$(x+y)^2 = (x+y)(x+y)$

$= x^2 + xy + yx + y^2$

$= x^2 + xy + xy + y^2$

$= x^2 + 2xy + y^2$

	x	y
x	x^2	xy
y	yx	y^2

Problem 2. Simplify with positive exponent. $\left(\frac{x^{-3}c^{2-2}v^6 5^0}{v^{-6}x^3 9}\right)^{-2}$

$= \left(\frac{x^{-3} c^0 v^6 5^0}{v^{-6} x^3 9}\right)^{-2}$

$= \left(\frac{x^{-3} \cdot 1 \cdot v^6 \cdot 1}{v^{-6} x^3 9}\right)^{-2}$

bring x^{-3} down change sign
bring v^{-6} up and change sign

$= \left(\frac{v^6 \cdot v^6}{x^3 x^3 9}\right)^{-2}$

$= \left(\frac{v^{6+6}}{x^{3+3} \cdot 9}\right)^{-2}$

$= \left(\frac{v^{12}}{x^6 \cdot 9}\right)^{-2}$

$= \frac{v^{12(-2)}}{x^{6(-2)}} 9^{-2}$

$= \frac{v^{-24}}{x^{-12} 9^{-2}} = \frac{x^{12} 9^2}{v^{24}}$

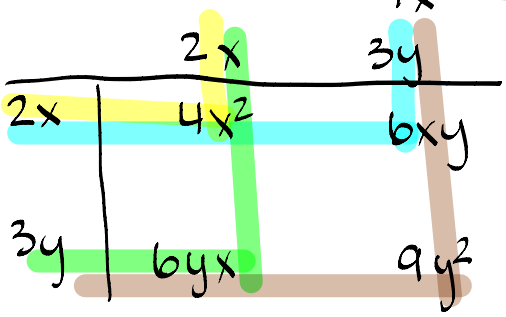
Problem 3. Expand $(2x+3y)^2$ and solve.

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

$$= (2x)(2x) + 2x(3y) + 3y(2x) + 3y(3y)$$

$$= 4x^2 + 6xy + 6yx + 9y^2$$

$$= 4x^2 + 12xy + 9y^2$$



Problem 4. Guess my age. No