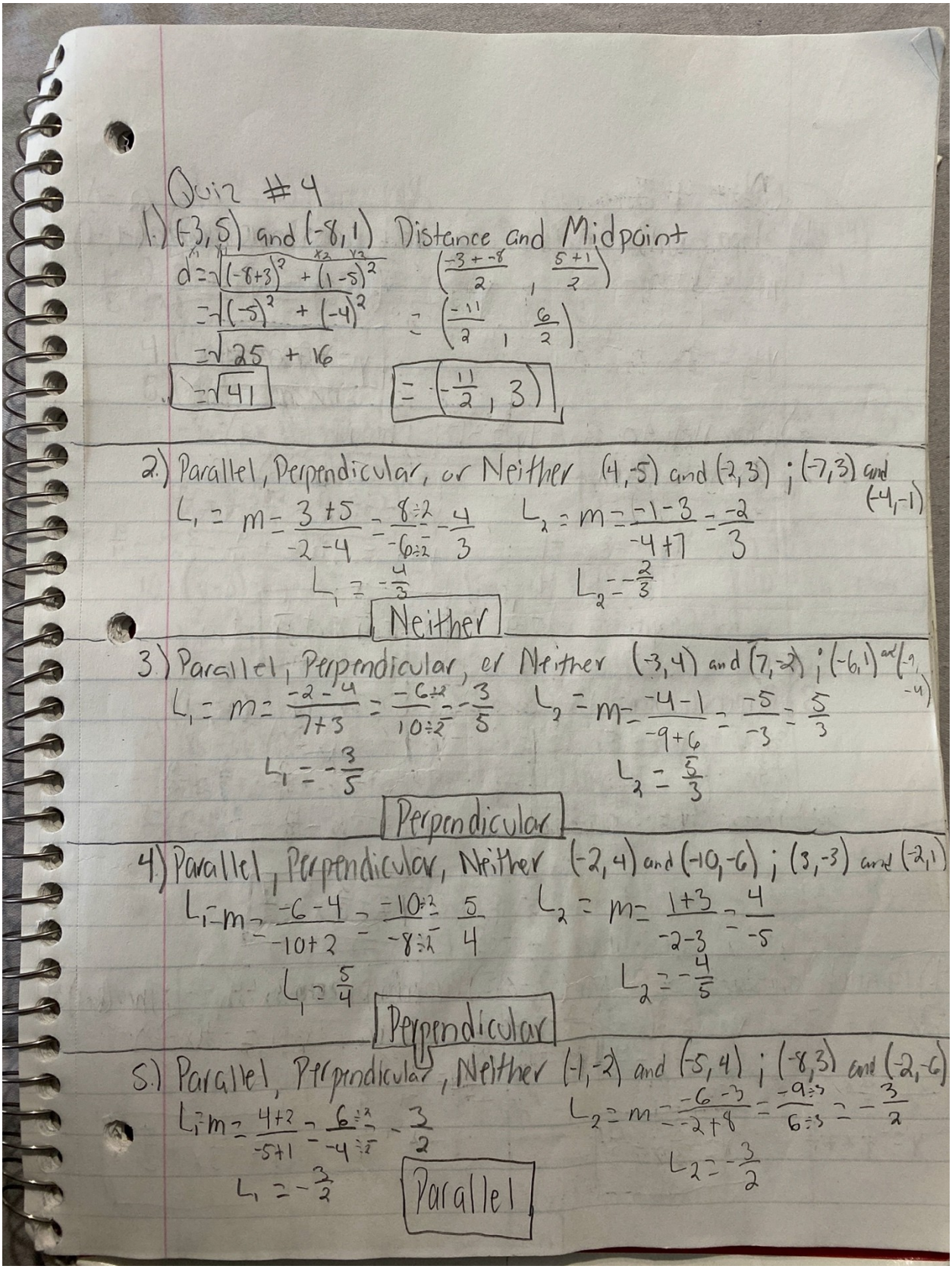

Quiz #4

1.) (-3, 5) and (-8, 1) Distance and Midpoint

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$= \sqrt{(-8+3)^2 + (1-5)^2}$

$= \sqrt{(-5)^2 + (-4)^2}$

$= \sqrt{25 + 16}$

$= \sqrt{41}$

$\left(\frac{-3 + -8}{2}, \frac{5+1}{2}\right)$

$= \left(\frac{-11}{2}, \frac{6}{2}\right)$

$= \left(-\frac{11}{2}, 3\right)$

2.) Parallel, Perpendicular, or Neither (4, -5) and (-2, 3); (-7, 3) and (-4, -1)

$L_1 = m = \frac{3+5}{-2-4} = \frac{8 \div 2}{-6 \div 2} = -\frac{4}{3}$

$L_1 = -\frac{4}{3}$

$L_2 = m = \frac{-1-3}{-4+7} = \frac{-2}{3}$

$L_2 = -\frac{2}{3}$

Neither

3.) Parallel, Perpendicular, or Neither (-3, 4) and (7, -2); (-6, 1) and (-9, -4)

$L_1 = m = \frac{-2-4}{7+3} = \frac{-6 \div 2}{10 \div 2} = -\frac{3}{5}$

$L_1 = -\frac{3}{5}$

$L_2 = m = \frac{-4-1}{-9+6} = \frac{-5}{-3} = \frac{5}{3}$

$L_2 = \frac{5}{3}$

Perpendicular

4.) Parallel, Perpendicular, Neither (-2, 4) and (-10, -6); (3, -3) and (-2, 1)

$L_1 = m = \frac{-6-4}{-10+2} = \frac{-10 \div 2}{-8 \div 2} = \frac{5}{4}$

$L_1 = \frac{5}{4}$

$L_2 = m = \frac{1+3}{-2-3} = \frac{4}{-5}$

$L_2 = -\frac{4}{5}$

Perpendicular

5.) Parallel, Perpendicular, Neither (-1, -2) and (-5, 4); (-8, 3) and (-2, -6)

$L_1 = m = \frac{4+2}{-5+1} = \frac{6 \div 2}{-4 \div 2} = -\frac{3}{2}$

$L_1 = -\frac{3}{2}$

$L_2 = m = \frac{-6-3}{-2+8} = \frac{-9 \div 3}{6 \div 3} = -\frac{3}{2}$

$L_2 = -\frac{3}{2}$

Parallel