Name: _____ Geometry
Date: _____ Review
Class: _____

Dividing a segment by a ratio, finding equations of lines.

1) Divide $\overline{SP}$ into two parts using point Q which will create the ratio SQ:PQ = 5:4. The segment has endpoints S(-2, -9) and P(-20, 18)

a) (-12, 6) b) (-10, 3) c) (-4, -6) d) (-10, 4.5)

2) Point Q divides segment DW into two parts that create the ratio DQ:QW = 3:7. You know the coordinates of D(-10, 4) and Q(-4, 16), use these coordinates to find point W.

3) $\overline{TU}$ has point N on the segment which divides the segment into the ratio TN:NU = 2:3. If point T has the coordinates (10, -1) and point U has the coordinates (6, 7) what would the coordinates of point N be?

4) Point D is on the segment LI so that the ratio LD:ID = 5:17 is created. Point I has the coordinates (39, 55) and point D has coordinates (-12, -21.5). Using these points find the coordinates of point L.

a) (-51.4, -80.6) b) (-63, -98)
c) (-23.6, -38.9) d) (-27, -35)

5) Find the equation of the perpendicular bisector of the segment with endpoints (-2, 5) and (4, 19).

6) Find the equation of a line that is parallel to the line passing through (-2, 6) and (-8, 7) which passes through (-14, 19).

a) $y = -\frac{1}{6}x + \frac{39}{6}$ b) $y = -\frac{1}{6}x + \frac{50}{3}$

c) y = 6x + 18 d) y = 6x + 103

7) Using #3, find the equation of a line that is perpendicular to segment TU which passes through point N.

8) Find the equation of a line that bisects segment NI with points N(9, -10) and I(14, -5) and passes through (-6, -12).

9) Find the equation of a line that splits segment BY into the ratio BT:TY = 2:3 at point T and also passes through (-1, -1). Segment BY has points B(6, 4) and Y(16, -11).

10) Find the equation of a line that connects the midpoints of segment TU and segment OP. You know the following coordinates: T(-6, 8), O(-5, 10), U(4, 12), and P(-10, 7).