1. Find the coordinate of Y along the directed line segment XZ so that XY to YZ is the given ratio.
2. X(6, -2), Z(1, -4) ratio is 1 to 4.
3. X(-10, 12), Z(15, -8) ratio is 2 to 3.
4. Give equations; determine whether the following lines are parallel, perpendicular or neither.
5. 4x – 2y = 8 and y = 2x + 7
6. y = (1/4)x + 6 and y = 6 + 4x
7. y + 3x = 6 and y = (1/3)x + 5
8. Given two points on a line, determine whether the following lines are parallel, perpendicular or neither.
9. Line 1: (-3, 1) and (-7, -2) Line 2: (2, -1) and (8, 4)
10. Line 2: (10, 5) and (-8, 9) Line 2: (2, -4) and (11, -6)
11. Write the equation of a line a) parallel to the given line and through the given point, b) perpendicular to the given line through the given point.

P(3, 8) , y=(1/5)(x + 4)

1. Write the equation of a line a) parallel to the given line and through the given point, b) perpendicular to the given line through the given point.

P(4, 5) , y=3x +-7

1. Write the equation of a line a) parallel to the given line and through the given point, b) perpendicular to the given line through the given point.

P(-3, 7), x = 3

1. Find the distance from (-9, -3) and line y = x – 6.
2. Find the equation of the perpendicular bisector of the line segment with the given endpoints.
3. (-6, -6) and (2, 2)
4. (10, 22) and (4, 10)
5. Is the quadrilateral QRST a parallelogram (has opposite sides parallel) given Q(5,9), R(9,7) S(8,4) and T(4, 6)?
6. Is a triangle with vertices (-2, 4), (3, 6) and (2, -3) a right triangle?
7. Solve the following system.

Y = 4x + 9

Y – 4x = 1

What happened? Why?

1. Can two non-vertical parallel lines have the same y-intercept?
2. The line through (-1, k) and (-7, -2) is perpendicular to the line y = x + 1. What is the value of k?
3. What is the distance between y = 2x and y = 2x + 5?