Answer on Question #83168 – Math – Analytic Geometry

Question

Find the equation of the line which is parallel to the 2y+3x=3 and passes through the midpoint (-2, 3) and (4, 5)

Solution

Parallel lines have equal slopes, so we find the slope(m) of 2y+3x=3

2y+3x=3

2y=-3x+3

y=-3/2x+3/2

y=-1.5x+1.5

m=-1.5

The midpoint between two points is ((x1+x2)/2, (y1+y2)/2)

x1=-2 x2=4 x0 = (-2+4)/2=1

y1=3   y2=5   y0 = (3+5)/2=4

Equation of the line is (y-y0) = m(x-x0)

 (y-4) = -1.5(x-1)

y = -1.5x+5.5

2y+3x=11

Answer: 2y+3x=11.