

Maths

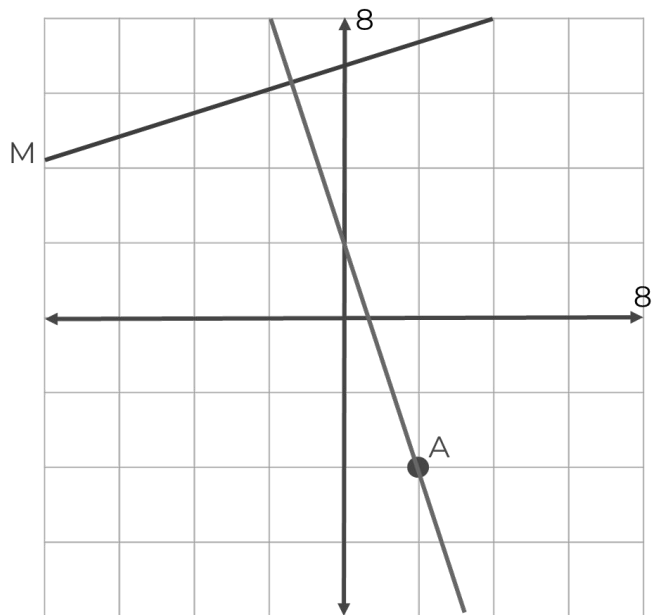
Work Out the Equation of the Line Perpendicular That Passes Through a Given Point

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Find the equation of the perpendicular line

1. Find the equation of the line perpendicular to M that passes through A



2. Find the equation of the line perpendicular to $y = 11 - 5x$ that passes through $(-35, 11)$

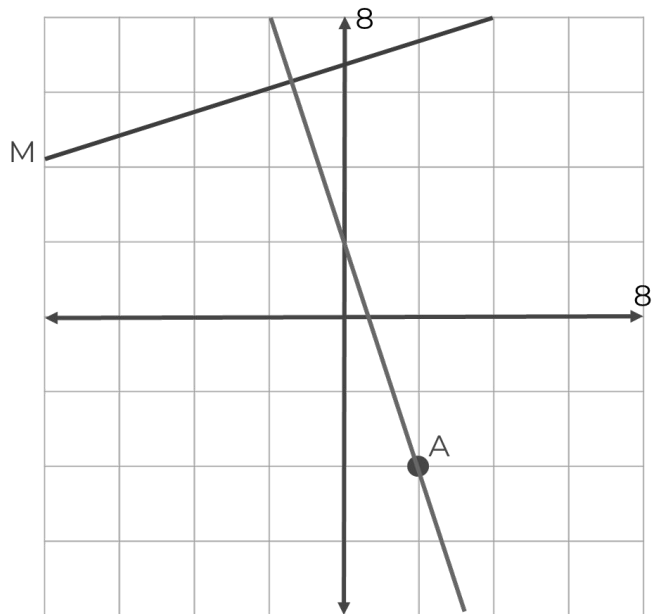


Answers



Find the equation of the perpendicular line

1. Find the equation of the line perpendicular to M that passes through A



Gradient of M is $\frac{1}{3}$
So gradient of perpendicular is -3
 $y = -3x + c$
A is (2, -4)
Sub in $x = 2, y = -4$
 $-4 = -3(2) + c$
 $-4 = -6 + c$
 $c = 2$
So $y = -3x + 2$

2. Find the equation of the line perpendicular to $y = 11 - 5x$ that passes through (-35, 11)

Gradient of M is -5
So gradient of perpendicular is $\frac{1}{5}$

$$y = \frac{1}{5}x + c$$

Sub in $x = -35, y = 11$

$$11 = \frac{1}{5}(-35) + c$$

$$11 = -7 + c$$

$$c = 18$$

$$\text{So } y = \frac{1}{5}x + 18$$

