Lesson 20: Every Line Is a Graph of a Linear Equation

Classwork

Opening Exercise

Figure 1

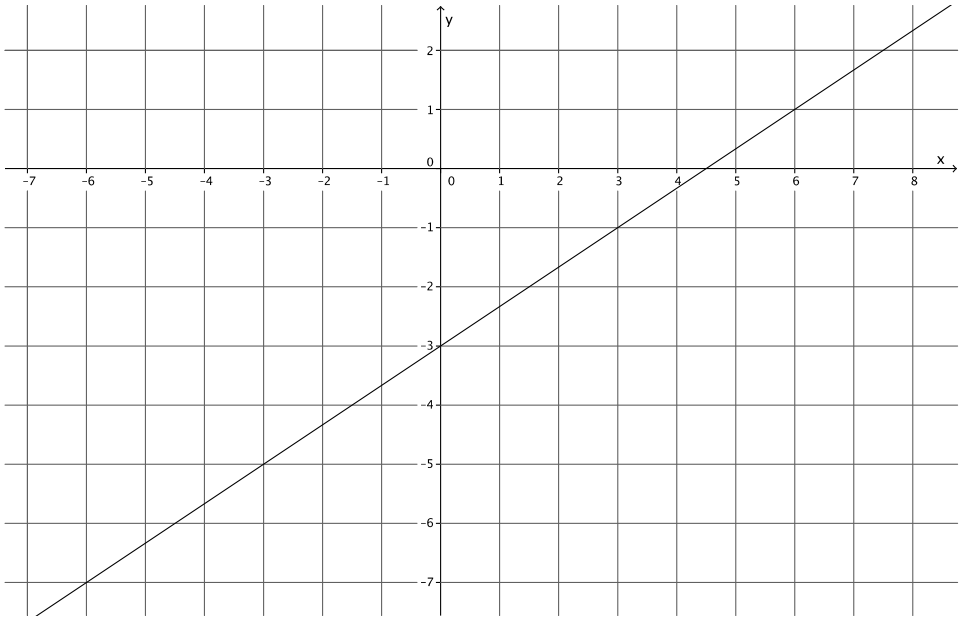
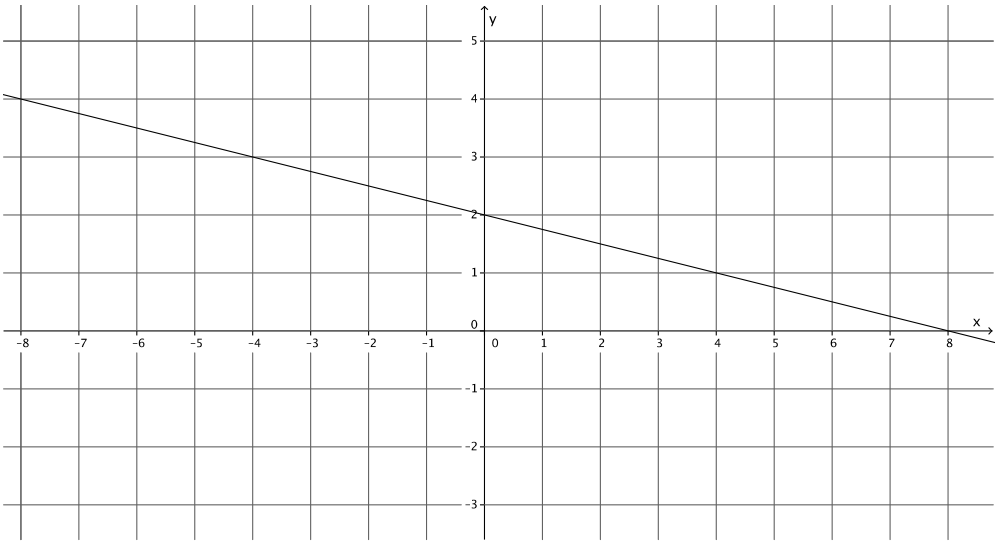
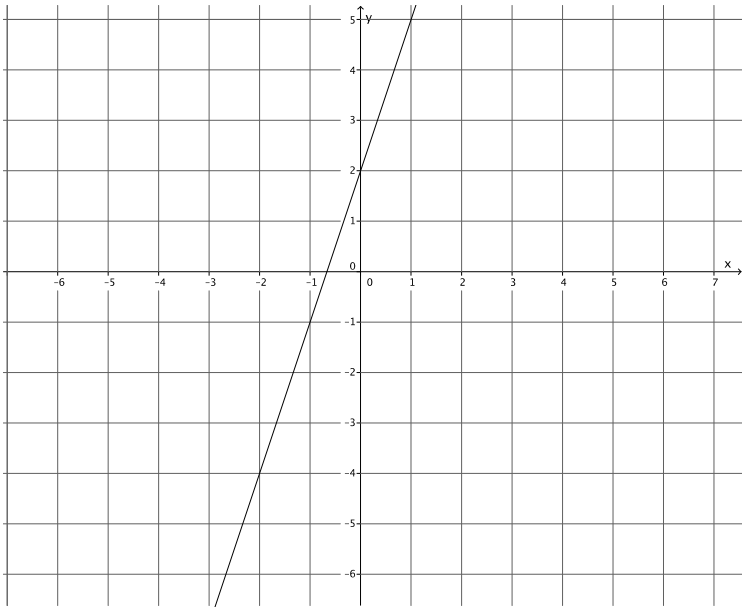


Figure 2



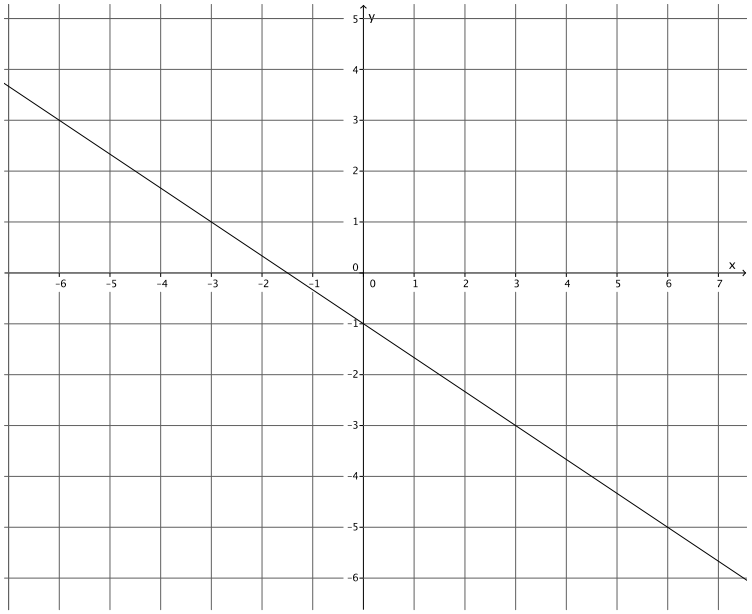
Exercises

1. Write the equation that represents the line shown.



Use the properties of equality to change the equation from slope-intercept form, $y = mx + b$, to standard form, $ax + by = c$, where a, b, and c are integers, and a is not negative.

2. Write the equation that represents the line shown.



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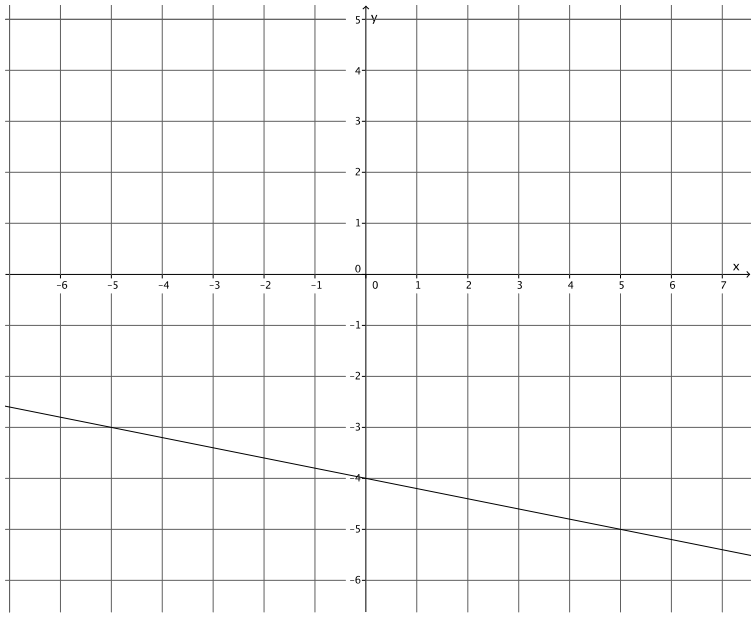

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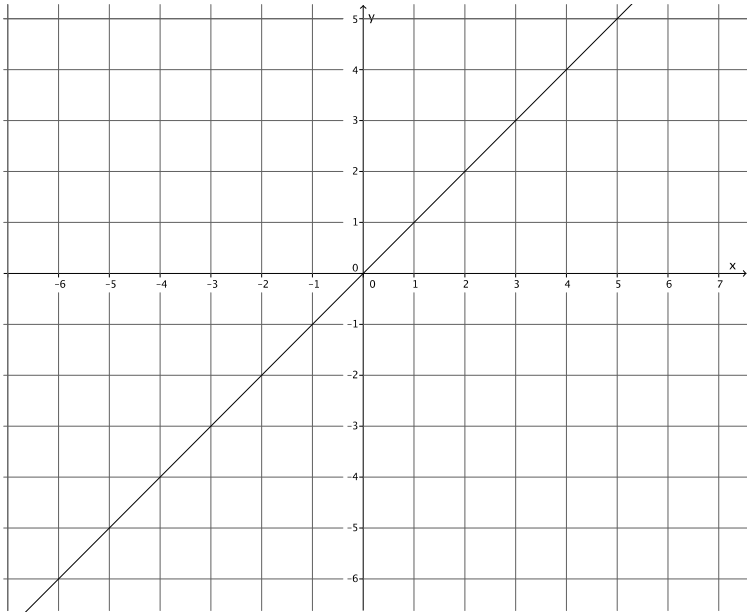

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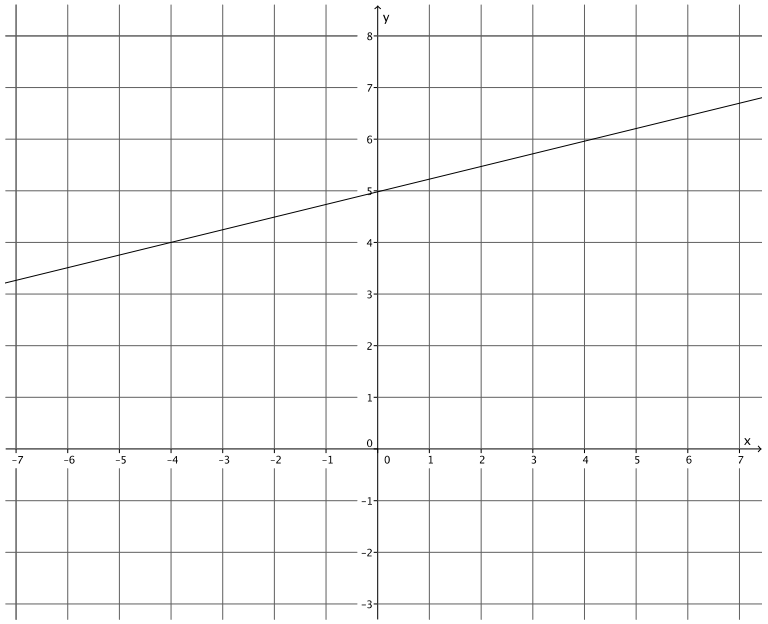

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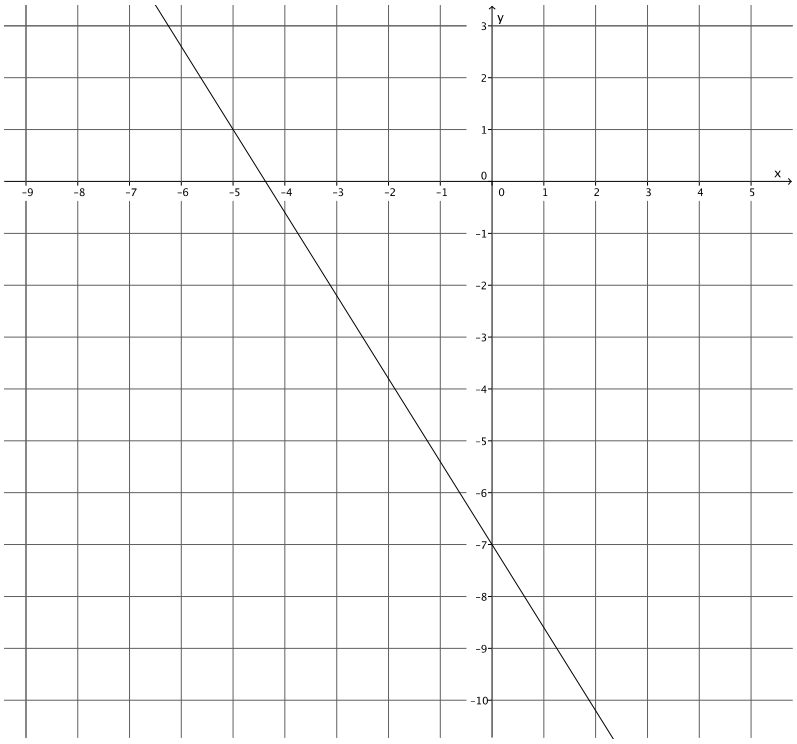

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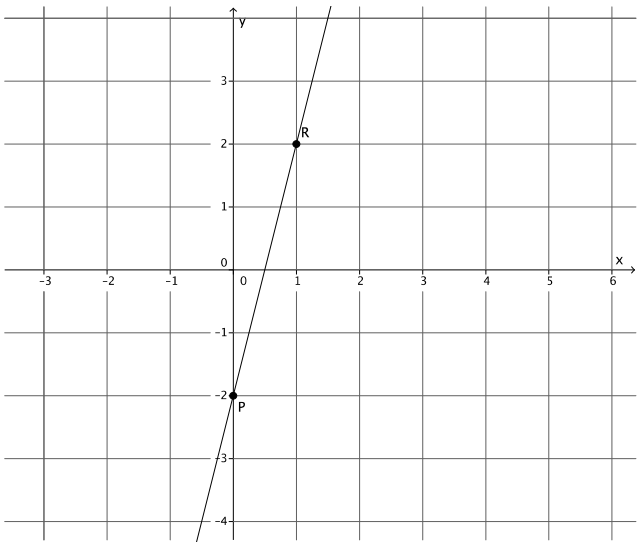
Lesson Summary

Write the equation of a line by determining the y-intercept, $(0, b)$ and the slope, m, and replacing the numbers b and m into the equation $y = mx + b$.

Example:



The y-intercept of this graph is $(0, -2)$.

The slope of this graph is $m = \frac{4}{1} = 4$.

The equation that represents the graph of this line is $y = 4x - 2$.

Use the properties of equality to change the equation from slope-intercept form, $y = mx + b$, to standard form, $ax + by = c$, where a, b, and c are integers and a is not negative.

Problem Set

1. Write the equation that represents the line shown.

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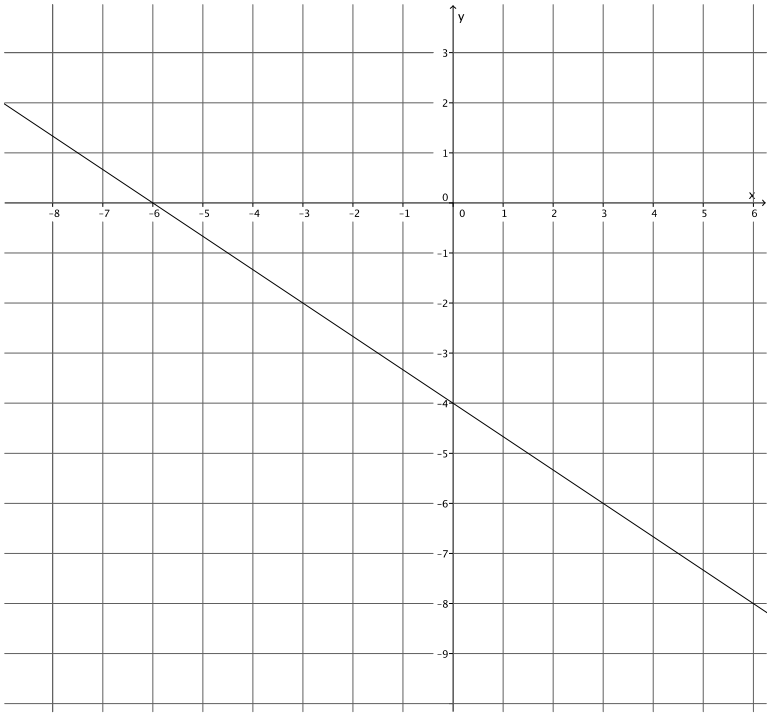

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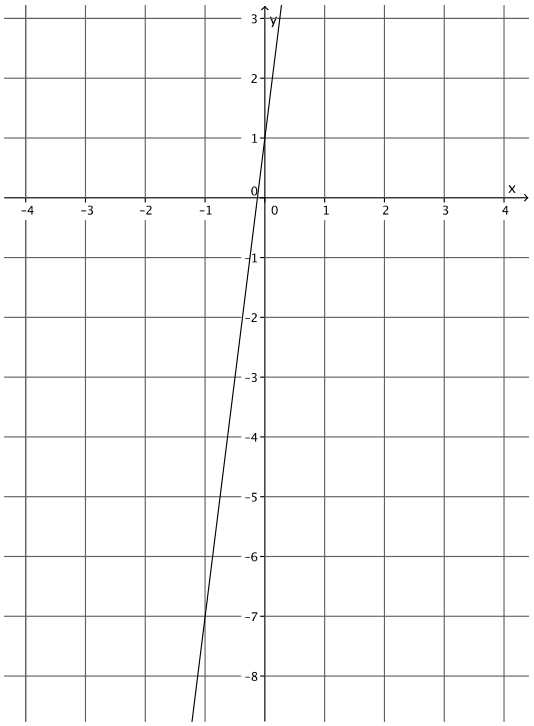

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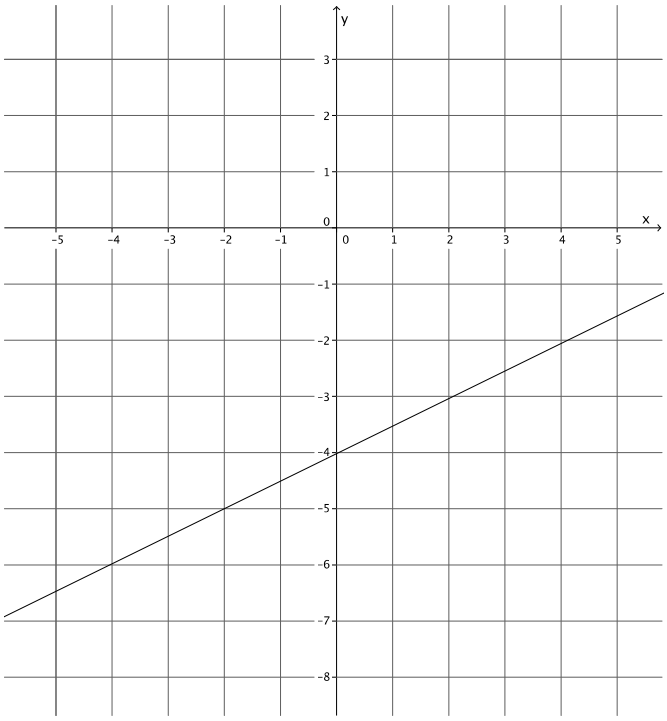

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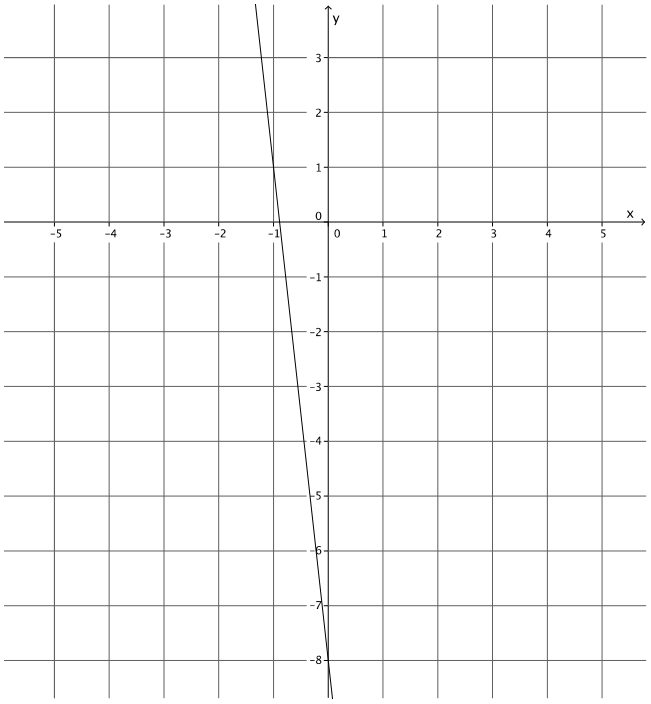

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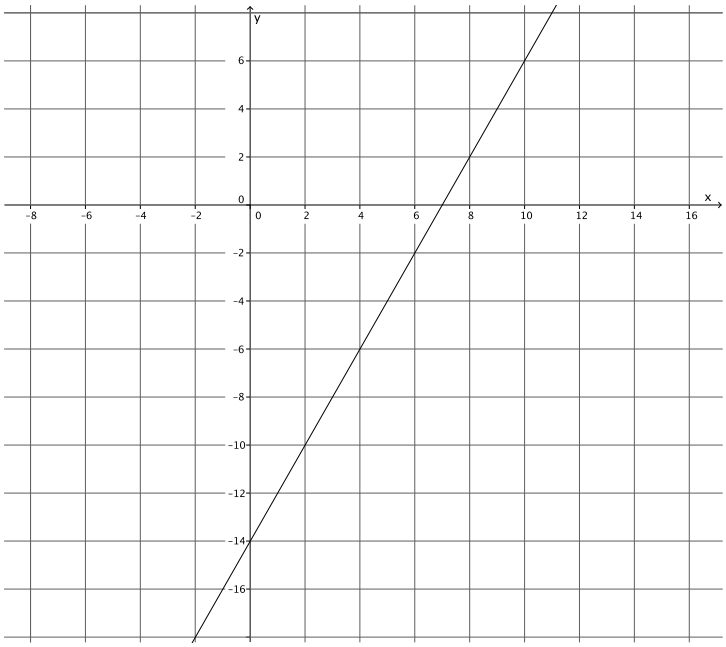

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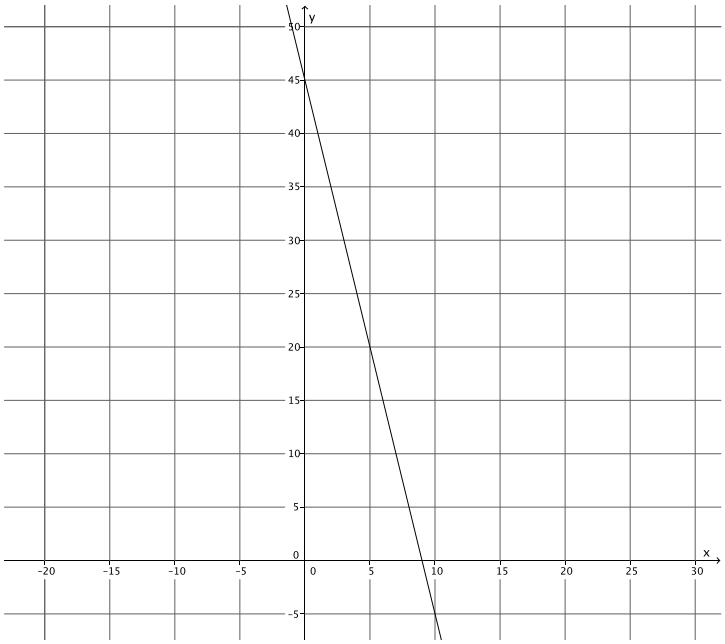

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