Linear models: equations, inequalities and intersections

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Name: _____ Class: _____ Date: _____

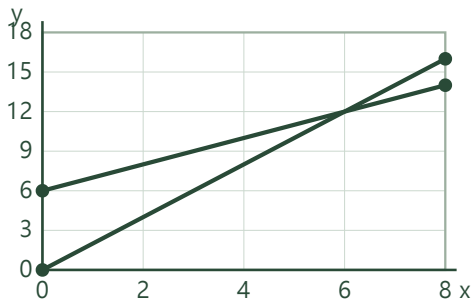
Worked example 1

A delivery costs a fixed 6 dollars plus 2 dollars per item. Write C in terms of item count n and find the cost of 5 items.

Guided attempt 2

For a nonnegative whole-number count n of uses, plan A costs 2n dollars and plan B costs n+6 dollars. Find the equal-cost point and explain its two coordinates.

1. Equal costs: $2n = \square + 6$.
2. Subtract n: $n = \square$; cost = $2 \times \square = \square$.
3. Intersection (number of uses, cost) = (____, ____).



Continuous comparison lines over the displayed window 0–8; actual numbers of uses are nonnegative whole numbers.

Prerequisite 3

Find the x-intercept and explain why y is set to zero.

$$y = 3x - 6$$

Prerequisite 4

For the given function, solve $y > 0$. Explain the required part of the graph.

$$y = 2x - 4$$

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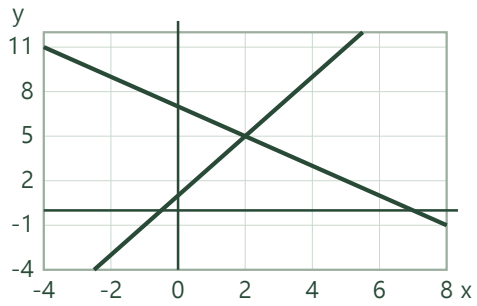
Independent practice 5

Profit P=3n−12 dollars for a whole-number sales count n≥0. Find all counts with no loss.

$$y = 3x - 12$$

Independent practice 6

Find the common point of the two given lines, or explain why there is none or there are infinitely many.



Use the stated conditions and the labelled scales.

Independent practice 7

Find the x-intercept and explain why y is set to zero.

$$y = -2x + 6$$

Independent practice 8

A tank starts with 5 L and gains 2 L/min for 10 minutes. Write V(t), its stated time domain, and V(10).

Exit question 9

For the given function, solve $y \geq 0$. Explain the required part of the graph.

$$y = -1x + 4$$

Exit question 10

Find the x-intercept and explain why y is set to zero.

$$y = 4x - 8$$