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Example 1

Add. $-4\frac{1}{3} + 1\frac{1}{4}$

Solution

$$-4\frac{1}{3} + 1\frac{1}{4} = \frac{4 \times 3 + 1}{3} + \frac{1 \times 4 + 1}{4}$$

Convert to improper fractions first without the negative sign.

$$4\frac{1}{3} = \frac{4 \times 3 + 1}{3} \text{ or } \frac{13}{3}$$

Then put negative sign back in.

$$= \frac{-13}{3} + \frac{5}{4}$$

$$= \frac{-13 \times 4}{3 \times 4} + \frac{5 \times 3}{4 \times 3}$$

Now, find a common denominator.
3 × 4 = 12.

$$= \frac{-52}{12} + \frac{15}{12}$$

Remember:
-52 + 15 = -37

$$= \frac{-52 + 15}{12}$$

$$= \frac{-37}{12} \text{ or } -3\frac{1}{12}$$

Write any improper fractions as mixed numbers.

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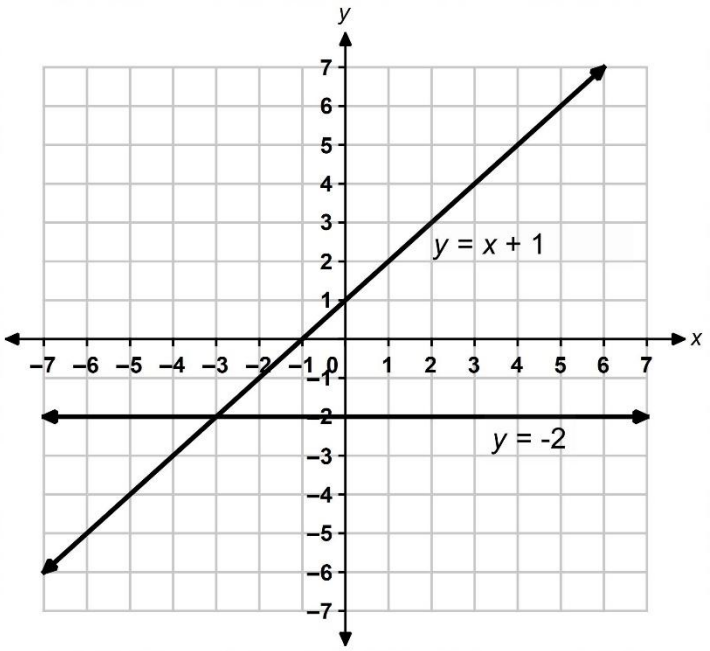
Exercises 3.2

1. The graphs of $y = x + 1$ and $y = -2$ are shown on the coordinate grid.

   a) At what point do the two lines intersect?

   b) What is the x-value of the point in part a)?

   c) What is the solution to the equation $x + 1 = -2$?



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Example 2

Solve. $3x + 2 \geq -1$

Solution

$3x + 2 \geq -1$

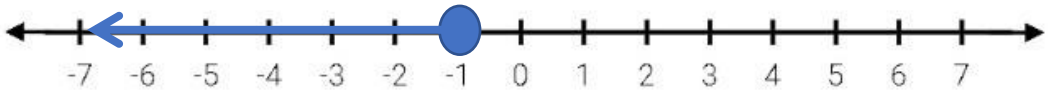
$3x + 2 \underline{-2} \geq -1 \underline{-2}$ Subtract 2 from both sides and simplify.

$3x \geq -3$

$\frac{3x}{3} \leq \frac{-3}{3}$ Divide both sides by 3.

$x \leq -1$

Now graph the inequality.



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4. The total cost of the graduation turned out to be $1,070. How many students attended the graduation party?

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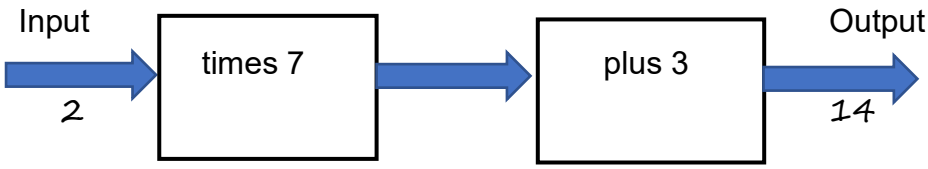
Exciting Extras

As mentioned previously, the function machine always does the order of operations. For example, suppose you calculate 3 + 2 × 7. The calculation is 14. The function machine might do the calculation as shown.



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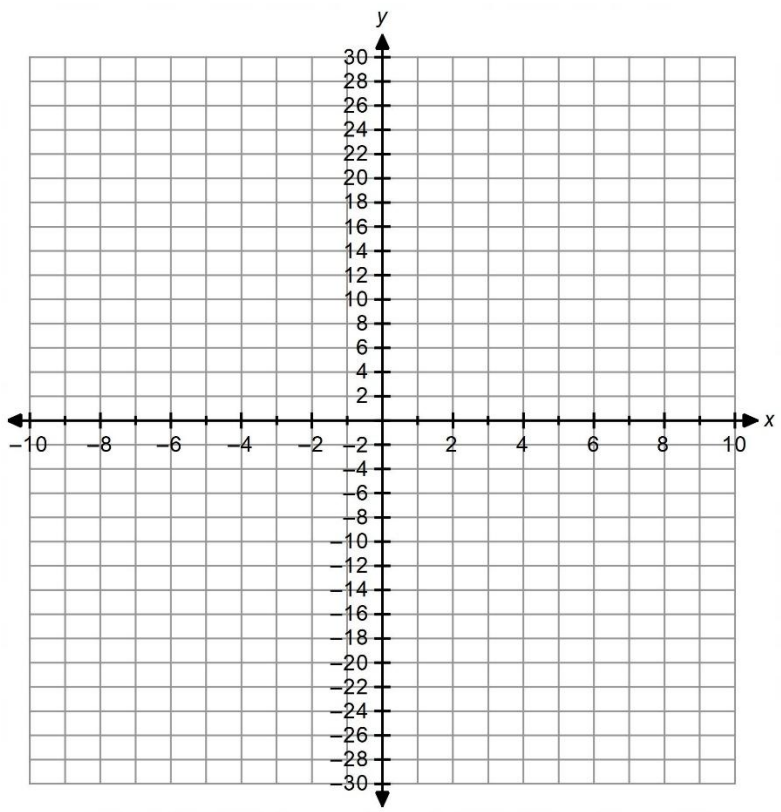
5. Plot the ordered pairs from part a) of question 4 on the coordinate grid shown.

   Can you join the points with a straight line?



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After the reflection,

- B(1, 2) becomes B’(11, 2)
- A(2, 4) becomes A’(10, 4)
- C(5, 2) becomes C’(7, 2)
- it looks *opposite* to the way it looked at the beginning.
- all side lengths and angle measures stay the same.