8th Grade Smarter Balance Review

18

Consider this equation.

$$c = ax - bx$$

Joseph claims that if a, b, and c are non-negative integers, then the equation has exactly one solution for x.

Select **all** cases that show Joseph's claim is **incorrect**.

- [ ] $a - b = 1,\ c = 0$
- [ ] $a = b,\ c \neq 0$
- [ ] $a = b,\ c = 0$
- [ ] $a - b = 1,\ c \neq 1$
- [ ] $a \neq b,\ c = 0$

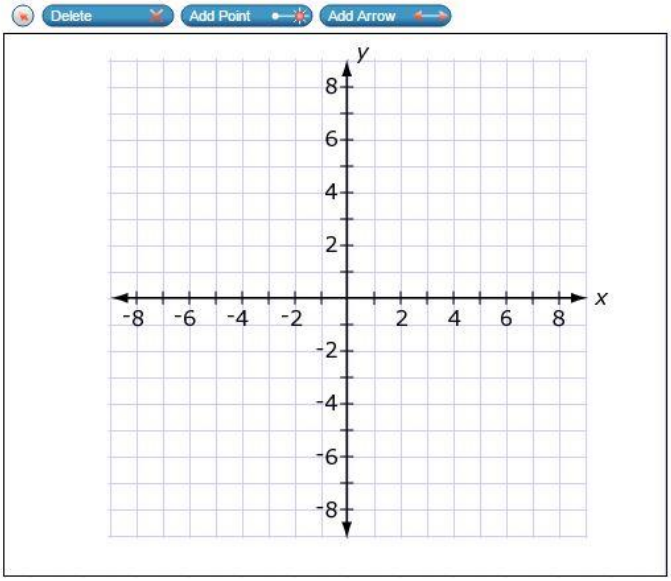
19

John and Kim wrote down two different functions that have the same rate of change.

John's function is represented by the table shown.

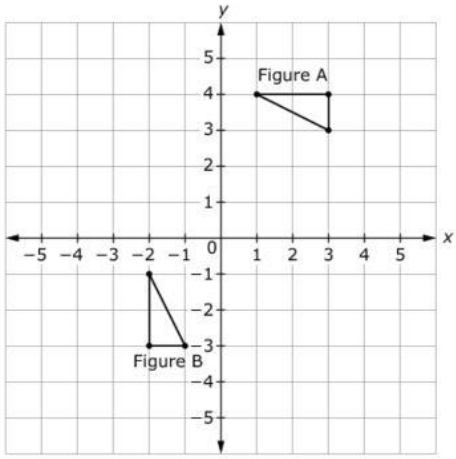
x	y
-1	-5
1	-1
3	3

Use the Add Arrow tool to graph a function that could be Kim's function.



20

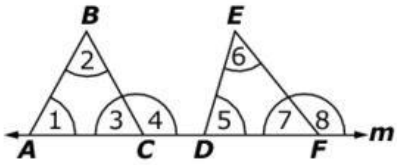
Two figures are shown on the coordinate grid.



Show that Figure A and Figure B are congruent by describing a sequence of basic transformations that maps Figure A onto Figure B. In your response, be sure to identify the transformations in the order they are performed.

21

The base of triangle *ABC* and the base of triangle *DEF* lie on line *m*, as shown in the diagram.



not drawn to scale

The measure of ∠4 is less than the measure of ∠8.

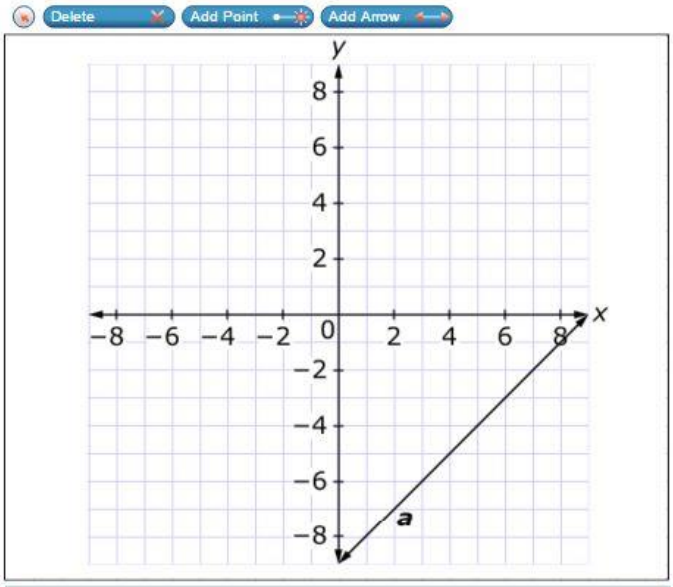
For each comparison, select the symbol (<, >, =) that makes the relationship between the first quantity and the second quantity true.

First Quantity	Comparison	Second Quantity
$m\angle 3$	< = >	$m\angle 7$
$m\angle 1 + m\angle 2$	< = >	$m\angle 5 + m\angle 6$

22

Line *a* is shown on the graph. Use the Add Arrow tool to construct line *b* on the graph so that:

- Line *a* and line *b* represent a system of linear equations with a solution of $(7, -2)$.
- The slope of line *b* is greater than -1 and less than 0.
- The *y*-intercept of line *b* is positive.



23

This table shows the linear relationship of the water level in a tank and time.

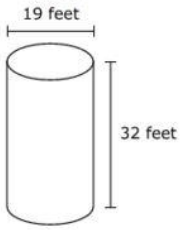
Time (hr)	Water Level (ft)
0	50
2	40
4	30
6	20

Enter the rate of change of the water level, in feet per hour.

24

An empty corn silo in the shape of a cylinder is being filled with corn.

Silo



The silo is filled at a constant rate for a total of 10 hours. The table shows the amount of corn, in cubic feet, in the silo at the given number of hours after filling started.

Number of Hours	Amount of Corn (cu ft)
0	0
3	2475
5	4125
8	6600

Enter the **percent** of the silo that is filled with corn at 10 hours.

25

Kyle was given the following problem to solve.

> A company sells baseball gloves and bats. The gloves regularly cost $30 and the bats regularly cost $90. The gloves are on sale for $4 off, and the bats are on sale for 10% off. The goal is to sell $1200 worth of bats and gloves each week. Last week, the store sold 14 gloves and 9 bats.
>
> Did the store meet its goal?

The steps Kyle used to solve the problem are shown. Select the first step that shows an error.

☐ **Step 1:**

$$\begin{array}{r} \$30 \\ -\ \$4 \\ \hline \$26 \end{array}$$

☐ **Step 2:**

$$\begin{array}{r} \$26 \\ \times\ 14 \\ \hline \$364 \end{array}$$

☐ **Step 3:**

$$\begin{array}{r} \$90 \\ \div\ 0.9 \\ \hline \$100 \end{array}$$

☐ **Step 4:**

$$\begin{array}{r} \$100 \\ \times\ 9 \\ \hline \$900 \end{array}$$

☐ **Step 5:** Yes, the store met its goal.

$$\begin{array}{r} \$900 \\ +\ \$364 \\ \hline \$1264 \end{array}$$

26

All 8th-grade students at a school answered Yes or No to the two survey questions shown.

- Do you have a cell phone?
  Yes No
- Do you have an MP3 player?
  Yes No

The same students responded to both questions. Complete the two-way frequency table to show the correct totals for the given data. You must complete **all** five cells of the table for a full credit response.

	MP3 Player	No MP3 Player	Total
Cell Phone	57	122	
No Cell Phone	30	65	
Total			

27

This graph shows a proportional relationship between the amount of money in Jack's savings account and the number of weeks Jack has been saving money.

Select the statement that correctly reflects what is shown in the graph.

Ⓐ The slope of the line is $\frac{6}{1}$, so Jack's savings rate is \$6 every week.

Ⓑ The slope of the line is $\frac{6}{1}$, so Jack's savings rate is \$1 every 6 weeks.

Ⓒ The slope of the line is $\frac{1}{6}$, so Jack's savings rate is \$6 every week.

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