

Unit 7 Lesson 10: Interpreting Inequalities

1 True or False: Fractions and Decimals (Warm up)

Student Task Statement

Is each equation true or false? Be prepared to explain your reasoning.

1. $3(12 + 5) = (3 \cdot 12) \cdot (3 \cdot 5)$

2. $\frac{1}{3} \cdot \frac{3}{4} = \frac{3}{4} \cdot \frac{2}{6}$

3. $2 \cdot (1.5) \cdot 12 = 4 \cdot (0.75) \cdot 6$

2 Basketball Game

Student Task Statement

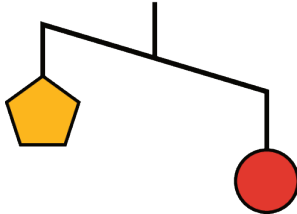
Noah scored n points in a basketball game.

1. What does $15 < n$ mean in the context of the basketball game?
2. What does $n < 25$ mean in the context of the basketball game?
3. Draw two number lines to represent the solutions to the two inequalities.
4. Name a possible value for n that is a solution to both inequalities.
5. Name a possible value for n that is a solution to $15 < n$, but not a solution to $n < 25$.
6. Can -8 be a solution to n in this context? Explain your reasoning.

3 Unbalanced Hangers

Student Task Statement

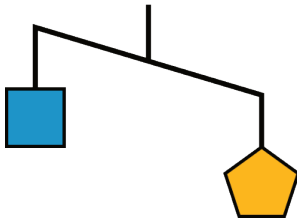
1. Here is a diagram of an unbalanced hanger.



a. Jada says that the weight of one circle is greater than the weight of one pentagon. Write an inequality to represent her statement. Let p be the weight of one pentagon and c be the weight of one circle.

b. A circle weighs 12 ounces. Use this information to write another inequality to represent the relationship of the weights. Then, describe what this inequality means in this context.

2. Here is another diagram of an unbalanced hanger.



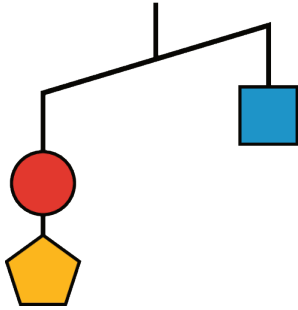
a. Write an inequality to represent the relationship of the weights. Let p be the weight of one pentagon and s be the weight of one square.

b. One pentagon weighs 8 ounces. Use this information to write another inequality to represent the relationship of the weights. Then, describe what this inequality means in this context.

c. Graph the solutions to this inequality on a number line.

3. Based on your work so far, can you tell the relationship between the weight of a square and the weight of a circle? If so, write an inequality to represent that relationship. If not, explain your reasoning.

4. This is another diagram of an unbalanced hanger.



Andre writes the following inequality: $c + p < s$. Do you agree with his inequality? Explain your reasoning.

5. Jada looks at another diagram of an unbalanced hanger and writes: $s + c > 2t$, where t represents the weight of one triangle. Draw a sketch of the diagram.