Lesson 1 Practice Problems

1. A rectangle has a height to width ratio of $3 : 4.5$. Give two examples of dimensions for rectangles that could be scaled versions of this rectangle.

2. One rectangle measures 2 units by 7 units. A second rectangle measures 11 units by 37 units. Are these two figures scaled versions of each other? If so, find the scale factor. If not, briefly explain why.

3. Ants have 6 legs. Elena and Andre write equations showing the proportional relationship between the number of ants, a, to the number of ant legs l. Elena writes $a = 6 \cdot l$ and Andre writes $l = \frac{1}{6} \cdot a$. Do you agree with either of the equations? Explain your reasoning.

   (From Unit 2, Lesson 5.)

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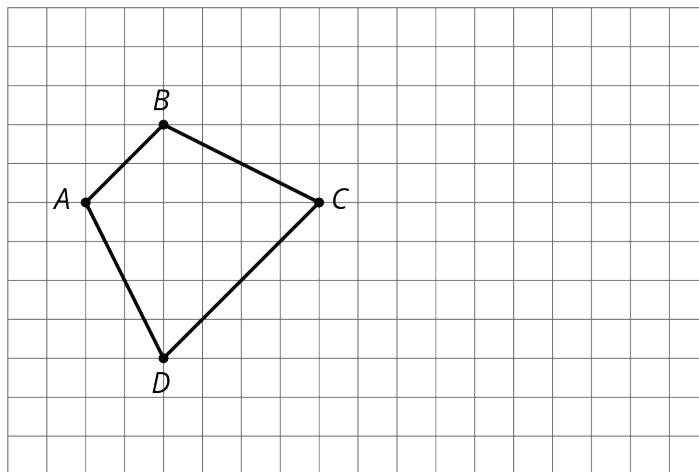
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4. On the grid, draw a scaled copy of quadrilateral ABCD with a scale factor $\frac{2}{3}$.

(From Unit 1, Lesson 4.)

5. Solve each equation mentally.

   a. $\frac{5}{2} \cdot x = 1$

   b. $x \cdot \frac{7}{3} = 1$

   c. $1 \div \frac{11}{2} = x$

(From Unit 1, Lesson 5.)

6. Lin has a scale model of a modern train. The model is created at a scale of 1 to 48.

   a. The height of the model train is 102 millimeters. What is the actual height of the train in meters? Explain your reasoning.

   b. On the scale model, the distance between the wheels on the left and the wheels on the right is $1\frac{1}{4}$ inches. The state of Wyoming has old railroad tracks that are 4.5 feet apart. Can the modern train travel on those tracks? Explain your reasoning.

(From Unit 1, Lesson 11.)

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