

## Figure 2.4: Examples of Lower- and Higher-Level-Cognitive-Demand Tasks

**Directions:** Choose the most appropriate grade level that follows and discuss why each of the questions meets the cognitive-demand levels to which it's assigned using the descriptions for lower- and higher-level-cognitive-demand tasks in the appendix (page 111).

**Grade 1:** I can compare two numbers and write my answer using  $<$ ,  $=$ , or  $>$ .

**Lower-level-cognitive-demand task:**

Write  $<$ ,  $=$ , or  $>$  in the circle to compare the numbers.

$$23 \quad \bigcirc \quad 51$$

**Higher-level-cognitive-demand task:**

Explain why  $45 < 62$ . Use numbers, pictures, or words.

**Grade 4:** I can add and subtract fractions and show my thinking.

**Lower-level-cognitive-demand task:**

Add and show how you know your answer is correct.

$$\frac{5}{6} + 2\frac{3}{6} = \square$$

**Higher-level-cognitive-demand task:**

Martin runs  $\frac{5}{6}$  of a mile and then walks  $2\frac{2}{6}$  mile. How much farther does he walk than run? Show how you know your answer is correct.

**Grade 7:** I can solve multistep ratio and percent problems.

**Lower-level-cognitive-demand task:**

What is a \$40 shirt worth if it is on sale for 20% off the original price?

**Higher-level-cognitive-demand task:**

Carla wants to buy tennis shoes that have a price tag of \$75. They are on sale for 20% off the original price, and she has a coupon to use that reduces the price an additional 10% off the sale price. Will Carla buy the shoes for 30% off the original price? Explain why or why not.

**High school (algebra 1):** I can graph linear functions and interpret their key features.

**Lower-level-cognitive-demand task:**

The following table shows the height of a plant in centimeters for each day of growth for ten days. Graph the points.

Explain the meaning of the slope of the graph.

Day	Plant Height (cm)
0	0.3
2	1.1
4	1.9
7	3.1
10	4.3

**Higher-level-cognitive-demand task:**

Samantha collects cans for recycling in Oregon. She makes a graph to show

the money she could earn— $y$ , for recycling  $x$  cans. Two points on her graph are (10, 1.50) and (25, 3.75).

- a. Draw a graph to show the amount of money Samantha earns for a given number of recycled cans.

- b. Explain the domain of the function.

- c. In California, Samantha's graph would look different. It would pass through the points (6, 0.60) and (18, 1.80). How does the money she could earn in each state compare? Use key features of the graph to explain your comparison.