**31. REASONING** The statements below justify the cross products property. Copy and complete the justification.

$$\frac{a}{b} = \frac{c}{d}$$       **Given**

$$bd \cdot \frac{a}{b} = bd \cdot \frac{c}{d}$$       **a.** ___?___

$$\frac{bd \cdot a}{b} = \frac{bd \cdot c}{d}$$       **b.** ___?___

$$ad = cb$$       **c.** ___?___

**32. CHALLENGE** In the proportion $\frac{5}{h} = \frac{k}{14}$, what happens to the value of $h$ as the value of $k$ increases? *Explain*.

## PROBLEM SOLVING

**33. RECIPES** A recipe that yields 12 buttermilk biscuits calls for 2 cups of flour. How much flour is needed to make 30 biscuits?

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**34. DIGITAL PHOTOGRAPHS** It took 7.2 minutes to upload 8 digital photographs from your computer to a website. At this rate, how long will it take to upload 20 photographs?

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**MAPS** A map has a scale of 1 cm : 15 km. Use the given map distance to find the actual distance.

**35.** 6 cm      **36.** 3.2 cm      **37.** 0.5 cm      **38.** 4.7 cm

**39. SCALE MODEL** An exhibit at Tobu World Square in Japan includes a scale model of the Empire State Building. The model was built using a scale of 1 m : 25 m. The height of the actual Empire State Building is 443.2 meters. What is the height of the model?

**40. MULTIPLE REPRESENTATIONS** The diameter of the burst of a firework is proportional to the diameter of the shell of the firework.

     **a. Writing a Proportion** Use the information in the diagram to find the burst diameter for a 4.75 inch shell.

     **b. Making a Table** Make a table of burst diameters for 2, 3, 4, 5, and 6 inch shells. Use the table to check your answer to part (a).

**41. TAKS REASONING** The ratio of the length of a soccer field to the width of the field is 3 : 2. A scale drawing of a soccer field has a scale of 1 in. : 20 yd. The length of the field in the drawing is 6 inches. What is the actual width of the field? *Explain* your reasoning.

Burst

— 90 ft —

Shell

2 in.

*Not drawn to scale*

= **WORKED-OUT SOLUTIONS**
on p. WS1

= **TAKS PRACTICE AND REASONING**

= **MULTIPLE REPRESENTATIONS**