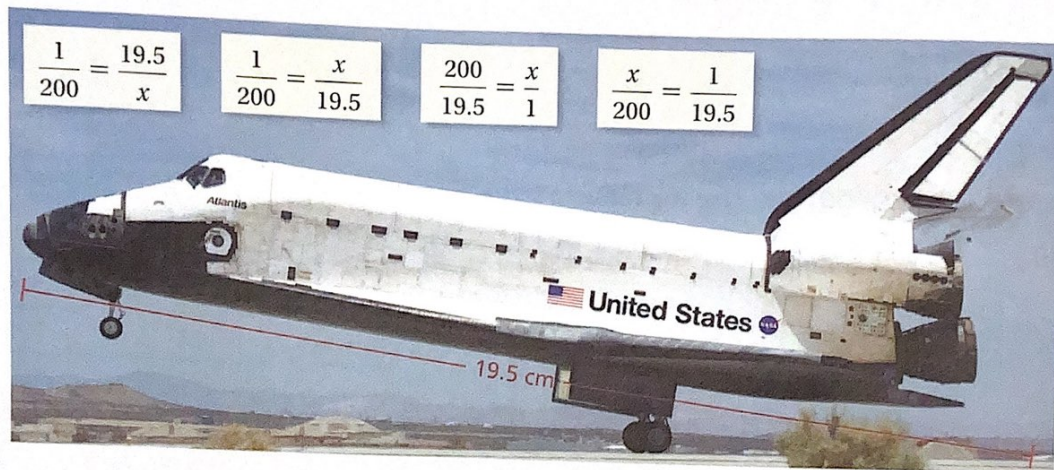


40. **WRITING A PROPORTION** Your science teacher has a photograph of the space shuttle *Atlantis*. Every 1 centimeter in the photograph represents 200 centimeters on the actual shuttle. Which of the proportions can you use to find the actual length  $x$  of *Atlantis*? Explain. (See Example 5.)



7  
MTR

41. **MODELING REAL LIFE** In an orchestra, the ratio of trombones to violas is 1 to 3. There are 9 violas. How many trombones are in the orchestra? (See Example 6.)

$$\frac{\text{trom.}}{\text{Violas}} \quad \frac{1}{3} = \frac{x}{9} \quad x = 3 \text{ trombones}$$

7  
MTR

42. **MODELING REAL LIFE** A dance team has 80 dancers. The ratio of seventh-grade dancers to all dancers is 5 : 16. Find the number of seventh-grade dancers on the team.

$$\frac{\text{7th grade}}{\text{totals}} \quad \frac{x}{80} = \frac{5}{16} \quad x = 25 \text{ 7th graders}$$

7  
MTR

43. **MODELING REAL LIFE** There are 144 people in an audience. The ratio of adults to children is 5 to 3. How many are adults?

totals go on the bottom!

$$\frac{x}{144} = \frac{5}{8} \quad x = 90 \text{ adults}$$

total of adults and children  
5+3



44. **PROBLEM SOLVING** You have \$50 to buy T-shirts. You can buy 3 T-shirts for \$24. Do you have enough money to buy 7 T-shirts? Justify your answer.

$$\frac{3 \text{ t-shirts}}{\$24} = \frac{7 \text{ t-shirts}}{\$x}$$

$x = \$56$   
no

45. **PROBLEM SOLVING** You buy 10 vegetarian pizzas and pay with \$100. How much change do you receive?



7  
MTR

46. **MODELING REAL LIFE** A person who weighs 120 pounds on Earth weighs 20 pounds on the Moon. How much does a 93-pound person weigh on the Moon?

$$\frac{120 \text{ Earth}}{20 \text{ moon}} = \frac{93 \text{ Earth}}{x \text{ moon}}$$

$x = 15.5 \text{ lb}$

47. **PROBLEM SOLVING** Three pounds of grass seed covers 1800 square feet. How many bags are needed to cover 8400 square feet?

$$\frac{3 \text{ lbs}}{1800 \text{ sq ft}} = \frac{x}{8400}$$

$x = 14 \text{ lbs}$

$14 \div 4 = 3.5 \text{ bags so buy 4 bags}$



7  
MTR

48. **MODELING REAL LIFE** There are 180 white lockers in a school. There are 3 white lockers for every 5 blue lockers. How many lockers are in the school?

$$\frac{180 \text{ white}}{x \text{ blue}} = \frac{3 \text{ white}}{5 \text{ blue}}$$

$x = 300 \text{ blue}$

$180 + 300 = 480 \text{ lockers}$