3.5 EXERCISES

HOMEWORK KEY

- = **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 17 and 49
- = **TAKS PRACTICE AND REASONING** Exs. 19, 20, 43, 54, 56, and 57
- = **MULTIPLE REPRESENTATIONS** Ex. 52

SKILL PRACTICE

1. VOCABULARY Copy and complete: A proportion is an equation that states that two ? are equal.

2. WRITING Write a ratio of two quantities in three different ways.

SIMPLIFYING RATIOS **Tell whether the ratio is in simplest form. If not, write it in simplest form.**

3. 14 to 18 **4.** 5 : 13 **5.** $\frac{24}{25}$ **6.** 28 to 32

EXAMPLE 2 on p. 163 for Exs. 7–22

SOLVING PROPORTIONS **Solve the proportion. Check your solution.**

7. $\frac{2}{5} = \frac{x}{3}$ **8.** $\frac{4}{1} = \frac{z}{16}$ **9.** $\frac{c}{8} = \frac{11}{4}$ **10.** $\frac{36}{12} = \frac{x}{2}$

11. $\frac{16}{7} = \frac{m}{21}$ **12.** $\frac{k}{9} = \frac{10}{18}$ **13.** $\frac{5}{8} = \frac{t}{24}$ **14.** $\frac{d}{5} = \frac{80}{100}$

15. $\frac{v}{20} = \frac{8}{4}$ **16.** $\frac{r}{60} = \frac{40}{50}$ **17.** $\frac{16}{48} = \frac{n}{36}$ **18.** $\frac{49}{98} = \frac{s}{112}$

19. TAKS REASONING What is the value of x in the proportion $\frac{8}{5} = \frac{x}{20}$?

(A) 2 (B) 23 (C) 32 (D) 40

20. TAKS REASONING What is the value of z in the proportion $\frac{z}{15} = \frac{28}{35}$?

(A) 8 (B) 12 (C) 18.75 (D) 425

ERROR ANALYSIS ***Describe*** **and correct the error in solving the proportion.**

21.

$$\frac{3}{4} = \frac{x}{6}$$
$$\frac{1}{6} \cdot \frac{3}{4} = \frac{1}{6} \cdot \frac{x}{6}$$
$$\frac{1}{8} = x$$

22.

$$\frac{m}{10} = \frac{50}{20}$$
$$10 \cdot \frac{m}{10} = 20 \cdot \frac{50}{20}$$
$$m = 50$$

WRITING AND SOLVING PROPORTIONS **Write the sentence as a proportion. Then solve the proportion.**

23. 3 is to 8 as x is to 32.

24. 5 is to 7 as a is to 49.

25. x is to 4 as 8 is to 16.

26. y is to 20 as 9 is to 5.

27. b is to 10 as 7 is to 2.

28. 4 is to 12 as n is to 3.

29. 12 is to 18 as d is to 27.

30. t is to 21 as 40 is to 28.