

**Chapter****8****Cumulative Review**

In Exercises 1–12, tell whether the ratios form a proportion.

1.  $\frac{66}{48}, \frac{11}{6}$

2.  $\frac{2}{3}, \frac{6}{9}$

3.  $\frac{39}{15}, \frac{13}{5}$

4.  $\frac{81}{73}, \frac{9}{7}$

5.  $\frac{13}{24}, \frac{26}{35}$

6.  $\frac{6}{19}, \frac{18}{57}$

7.  $\frac{48}{24}, \frac{12}{6}$

8.  $\frac{12}{10}, \frac{30}{25}$

9.  $\frac{86}{98}, \frac{43}{47}$

10.  $\frac{27}{63}, \frac{9}{12}$

11.  $\frac{4}{25}, \frac{14}{85}$

12.  $\frac{40}{62}, \frac{96}{155}$

In Exercises 13–27, solve the equation.

13.  $x^2 = 36$

14.  $x^2 = 144$

15.  $x^2 = 9$

16.  $x^2 + 7 = 23$

17.  $x^2 + 11 = 75$

18.  $x^2 + 18 = 67$

19.  $x^2 - 23 = 98$

20.  $x^2 - 3 = 33$

21.  $x^2 - 28 = 141$

22.  $5x^2 - 15 = 110$

23.  $3x^2 + 18 = 210$

24.  $4x^2 - 30 = 166$

25.  $6x^2 - 13 = 41$

26.  $2x^2 + 8 = 136$

27.  $7x^2 - 41 = 526$

In Exercises 28–42, find the midpoint  $M$  of the segment with the given endpoints.

28.  $J(-10, 8)$  and  $K(5, -4)$

29.  $C(0, 8)$  and  $D(-9, -9)$

30.  $T(12, 3)$  and  $U(6, -11)$

31.  $W(5, 0)$  and  $X(5, 9)$

32.  $D(10, 1)$  and  $E(-2, -3)$

33.  $N(-8, -12)$  and  $P(7, 7)$

34.  $B(6, 0)$  and  $C(12, 6)$

35.  $H(2, 1)$  and  $J(9, 6)$

36.  $R(-6, 9)$  and  $S(9, -4)$

37.  $K(-5, -11)$  and  $L(-8, 6)$

38.  $M(-3, 10)$  and  $N(-2, 7)$

39.  $E(10, 4)$  and  $F(0, -2)$

40.  $G(-5, -5)$  and  $H(12, -7)$

41.  $S(11, 6)$  and  $T(-4, 7)$

42.  $Y(-4, -9)$  and  $Z(-6, 3)$

In Exercises 43–57, find the distance between the two points.

43.  $W(1, -8)$  and  $X(-9, 1)$

44.  $L(-10, 6)$  and  $M(3, -1)$

45.  $G(11, 6)$  and  $H(5, 11)$

46.  $P(-7, 12)$  and  $Q(1, -9)$

47.  $S(6, 1)$  and  $T(-3, -3)$

48.  $C(-5, 3)$  and  $D(2, -7)$

49.  $B(11, 11)$  and  $C(-3, 12)$

50.  $F(12, 4)$  and  $G(-2, -9)$

51.  $M(-2, 10)$  and  $N(-7, -12)$

52.  $J(11, 10)$  and  $K(7, 7)$

53.  $D(10, 10)$  and  $E(-1, -12)$

54.  $K(5, -6)$  and  $L(-8, 10)$

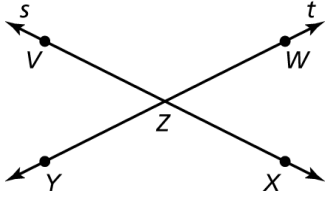
55.  $R(9, 0)$  and  $S(-1, -4)$

56.  $N(-4, 0)$  and  $P(10, -12)$

57.  $T(0, 9)$  and  $U(-12, -4)$

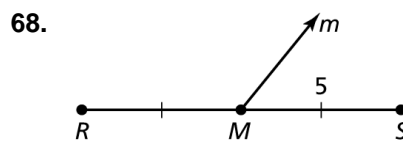
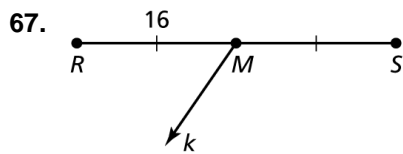
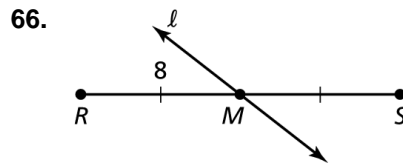
# Chapter 8 Cumulative Review (continued)

In Exercises 58–64, use the diagram.



58. What is another name for  $\overline{VX}$ ?
59. What is another name for  $\overline{WY}$ ?
60. What is another name for ray  $\overrightarrow{YW}$ ?
61. What is another name for ray  $\overrightarrow{XV}$ ?
62. Name all rays with endpoint  $Z$ .
63. Name two pairs of opposite rays.
64. Name one pair of rays that are not opposite rays.

In Exercises 65–68, identify the segment bisector of  $\overline{RS}$ . Then find  $RS$ .

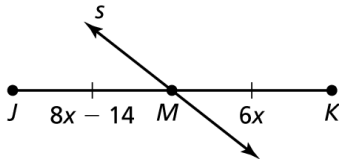


# Chapter 8

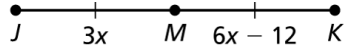
## Cumulative Review (continued)

In Exercises 69–72, identify the segment bisector of  $\overline{JK}$ . Then find  $JK$ .

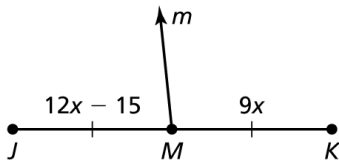
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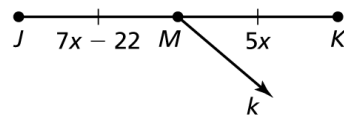
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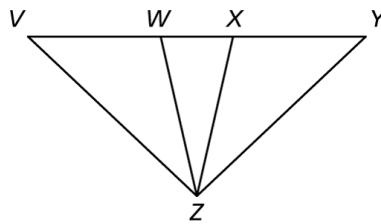
71.



72.



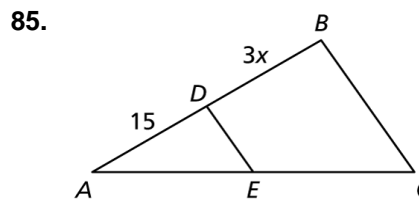
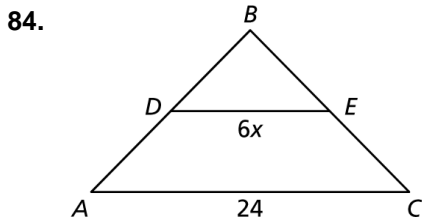
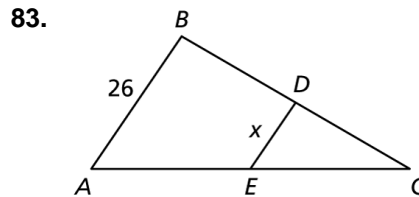
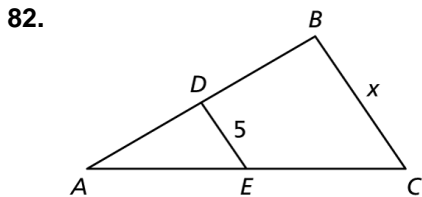
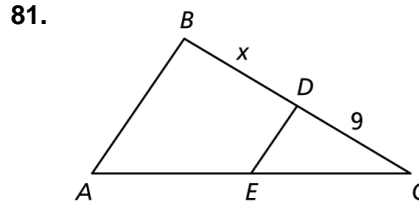
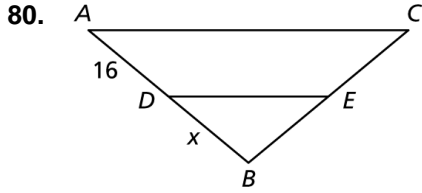
In Exercises 73–79, copy and complete the statement. State which theorem you used.



73. If  $\overline{WZ} \cong \overline{XZ}$ , then  $\angle \underline{\hspace{1cm}} \cong \angle \underline{\hspace{1cm}}$ .
74. If  $\overline{XZ} \cong \overline{XY}$ , then  $\angle \underline{\hspace{1cm}} \cong \angle \underline{\hspace{1cm}}$ .
75. If  $\angle V \cong \angle WZV$ , then  $\underline{\hspace{1cm}} \cong \underline{\hspace{1cm}}$ .
76. If  $\overline{ZV} \cong \overline{ZY}$ , then  $\angle \underline{\hspace{1cm}} \cong \angle \underline{\hspace{1cm}}$ .
77. If  $\angle ZWX \cong \angle ZXW$ , then  $\underline{\hspace{1cm}} \cong \underline{\hspace{1cm}}$ .
78. If  $\angle XZY \cong \angle Y$ , then  $\underline{\hspace{1cm}} \cong \underline{\hspace{1cm}}$ .
79. If  $\angle V \cong \angle Y$ , then  $\underline{\hspace{1cm}} \cong \underline{\hspace{1cm}}$ .

# Chapter 8 Cumulative Review (continued)

In Exercises 80–85,  $\overline{DE}$  is a midsegment of  $\triangle ABC$ . Find the value of  $x$ .



In Exercises 86 and 87, list the sides of the triangle from shortest to longest.

