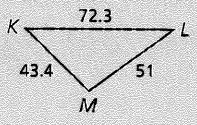
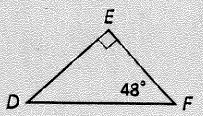
* Answers to page 365 #2-17

an acute angle.

2. Write the angles of $\triangle KLM$ in order from smallest to largest. $\angle L, \angle K, \angle M$



3. Write the sides of $\triangle DEF$ in order from shortest to longest. $\overline{EF}, \overline{DE}, \overline{DF}$



Tell whether a triangle can have sides with the given lengths. Explain.

4. 8.3, 10.5, 18.8 NO $10.5 + 8.3 \not> 18.8$

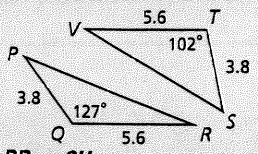
5. $4s$, $s + 10$, s^2, when $s = 4$ Yes 16, 14, 16

$16+14>16$
$16+16>14$
$14+16>16$

6. The distance from Kara's school to the theater is 9 km. The distance from her school to the zoo is 16 km. If the three locations form a triangle, what is the range of distances from the theater to the zoo? **greater than 7 km and less than 25 km**

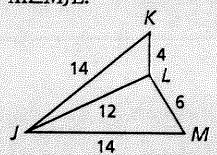
5.6 Inequalities in Two Triangles

7. Compare PR and SV.



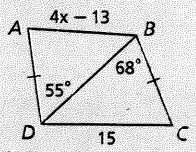
$PR > SV$

8. Compare $m\angle KJL$ and $m\angle MJL$.



$m\angle KJL < m\angle MJL$

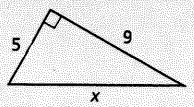
9. Find the range of values for x.



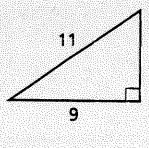
$3.25 < x < 7$

5.7 The Pythagorean Theorem

10. Find the value of x. Give the answer in simplest radical form. $\sqrt{106}$



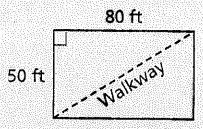
11. Find the missing side length. Tell if the side lengths form a Pythagorean triple. Explain.



$2\sqrt{10}$
NO
not a whole #

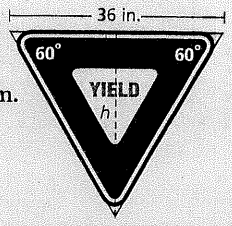
12. Tell if the measures 10, 12, and 16 can be the side lengths of a triangle. If so, classify the triangle as acute, obtuse, or right. **triangle; obtuse**

13. A landscaper wants to place a stone walkway from one corner of the rectangular lawn to the opposite corner. What will be the length of the walkway? Round to the nearest inch. **94 ft 4 in.**



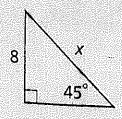
5.8 Applying Special Right Triangles

14. A yield sign is an equilateral triangle with a side length of 36 inches. What is the height h of the sign? Round to the nearest inch. **31 in.**



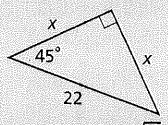
Find the values of the variables. Give your answers in simplest radical form.

15.



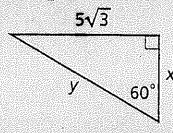
$x = 8\sqrt{2}$

16.



$x = 11\sqrt{2}$

17.



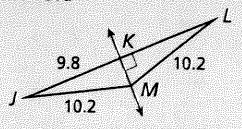
$x = 5; y = 10$

CHAPTER 5

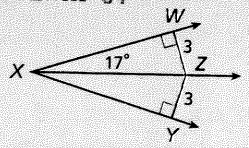
CHAPTER TEST #10-20

Find each measure.

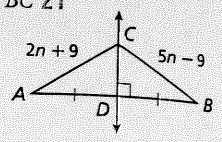
1. KL 9.8



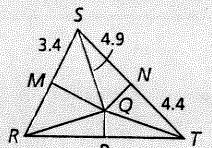
2. $m\angle WXY$ 34°



3. BC 21

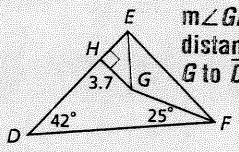


4. $\overline{MQ}$, $\overline{NQ}$, and $\overline{PQ}$ are the perpendicular bisectors of $\triangle RST$. Find RS and RQ.



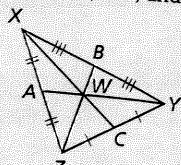
$RS = 6.8$; $RQ = 4.9$

5. $\overline{EG}$ and $\overline{FG}$ are angle bisectors of $\triangle DEF$. Find $m\angle GEF$ and the distance from G to $\overline{DF}$.



$m\angle GEF = 44°$; distance from G to $\overline{DF} = 3.7$

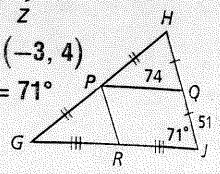
6. In $\triangle XYZ$, $XC = 261$, and $ZW = 118$. Find XW, BW, and BZ.



$XW = 174$; $BW = 59$; $BZ = 177$

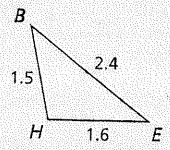
7. Find the orthocenter of $\triangle JKL$ with vertices $J(-5, 2)$, $K(-5, 10)$, and $L(1, 4)$. $(-3, 4)$

8. In $\triangle GHJ$ at right, find PR, GJ, and $m\angle GRP$. $PR = 51$; $GJ = 148$; $m\angle GRP = 71°$



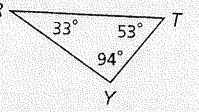
9. Write an indirect proof that two obtuse angles cannot form a linear pair.

10. Write the angles of $\triangle BEH$ in order from smallest to largest.



$\angle E$, $\angle B$, $\angle H$

11. Write the sides of $\triangle RTY$ in order from shortest to longest.

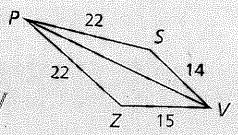


$\overline{TY}$, $\overline{RY}$, $\overline{RT}$

12. The distance from Arville to Branton is 114 miles. The distance from Branton to Camford is 247 miles. If the three towns form a triangle, what is the range of distances from Arville to Camford?

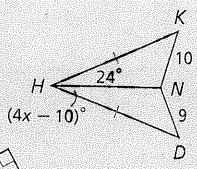
133 mi < d < 361 mi

13. Compare $m\angle SPV$ and $m\angle ZPV$.



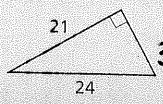
$m\angle SPV < m\angle ZPV$

14. Find the range of values for x.



$2.5 < x < 8.5$

15. Find the missing side length in the triangle. Tell if the side lengths form a Pythagorean triple. Explain.



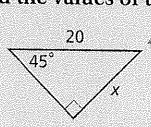
$3\sqrt{15}$

No ... not a whole #

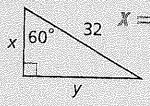
16. Tell if the measures 18, 20, and 27 can be the side lengths of a triangle. If so, classify the triangle as acute, obtuse, or right. triangle; obtuse

17. An IMAX screen is 62 feet tall and 82 feet wide. What is the length of the screen's diagonal? Round to the nearest inch. 102 ft 10 in.

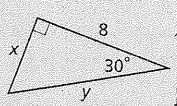
Find the values of the variables. Give your answers in simplest radical form.

18. 

$x = 10\sqrt{2}$

19. 

$x = 16$; $y = 16\sqrt{3}$

20. 

$x = \frac{8\sqrt{3}}{3}$; $y = \frac{16\sqrt{3}}{3}$

P9 368 # 37-62
369 skip 42

37. $\overline{BC}, \overline{AC}, \overline{AB}$

38. $\angle F, \angle H, \angle G$

39. greater than 9 cm and less than 18 cm

40. Yes; possible answer: the sum of each pair of 2 lengths is greater than the third length.

41. No; possible answer: when $z = 5$, the value of $3z$ is 15. So the 3 lengths are 5, 5, and 15. The sum of 5 and 5 is 10, which is not greater than 15. By the △ Inequality Thm., a △ cannot have these side lengths.

42. Possible answer:
Given: $\triangle ABC$
Prove: $\triangle ABC$ cannot have 2 obtuse ∡s.
Proof: Assume that $\triangle ABC$ has 2 obtuse ∡s. Let $\angle A$ and $\angle B$ be the obtuse ∡s. By the def. of obtuse, $m\angle A > 90°$ and $m\angle B > 90°$. If the 2 inequalities are added, $m\angle A + m\angle B > 180°$. However, by the △ Sum Thm., $m\angle A + m\angle B + m\angle C = 180°$. So $m\angle A + m\angle B = 180° - m\angle C$. But then $180° - m\angle C > 180°$ by subst., and thus $m\angle C < 0°$. A △ cannot have an ∠ with a measure less than 0°. So the assumption that $\triangle ABC$ has 2 obtuse ∡s is false. Therefore a △ cannot have 2 obtuse ∡s.

43. $PS < RS$

44. $m\angle BCA < m\angle DCA$

45. $-1.4 < n < 3$

46. $2.75 < n < 12.5$

Answers

47. $x = 2\sqrt{10}$

48. $x = 2\sqrt{33}$

49. 6; the lengths do not form a Pythagorean triple because 4.5 and 7.5 are not whole numbers.

50. 40; the lengths do form a Pythagorean triple because they are nonzero whole numbers that satisfy the equation $a^2 + b^2 = c^2$.

51. triangle; obtuse

52. not a triangle

53. triangle; right

54. triangle; acute

55. $x = 26\sqrt{2}$

56. $x = 6\sqrt{2}$

57. $x = 32$

58. $x = 24; y = 24\sqrt{3}$

59. $x = 6\sqrt{3}; y = 12$

60. $x = \frac{14\sqrt{3}}{3}; y = \frac{28\sqrt{3}}{3}$

61. 21 ft 3 in.

62. 15 ft 7 in.