Answers for 7.1

For use with pages 436–439

7.1 Skill Practice

1. Pythagorean triple

2. A right triangle, the measure of a leg of the triangle, and the measure of either the hypotenuse or the other leg.

3. 130

4. 65

5. 58

6. a and b represent the legs of the triangle, but 26 is the hypotenuse; $10^2 + 24^2 = 26^2$.

7. In step 2, the Distributive Property was used incorrectly;
$x^2 = 49 + 576$
$x^2 = 625$
$x = 25$.

8. about 14.1 ft

9. about 9.14 in.

10. about 2.91 ft

11. 120 m^2

12. 192 ft^2

13. 48 cm^2

14. 75

15. 40

16. 32

17. B

18. 45, leg

19. 15, leg

20. 100, hypotenuse

21. 52, hypotenuse

22. 40, leg

23. 21, leg

24. $3\sqrt{5}$

25. $11\sqrt{2}$

26. $\sqrt{65}$

27. A

28. 6

29. $2\sqrt{13}$

30. 12

7.1 Problem Solving

31. about 127 ft

32. 8 ft

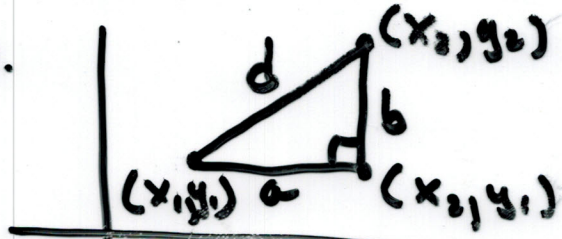
33. The longest side of the triangle is opposite the largest angle, which in a right triangle is the right angle.

34. a. about 187 ft

b. about 19 trees

c. about \$228

36).



$a^2 + b^2 = d^2$

$a = (x_2 - x_1)$

$b = (y_2 - y_1)$

$(x_2 - x_1)^2 + (y_2 - y_1)^2 = d^2$

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

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35. a-b.

BC	10	20	30
AC	60.8	63.2	67.1
CE	114.0	104.4	94.9
AC + CE	174.8	167.6	162

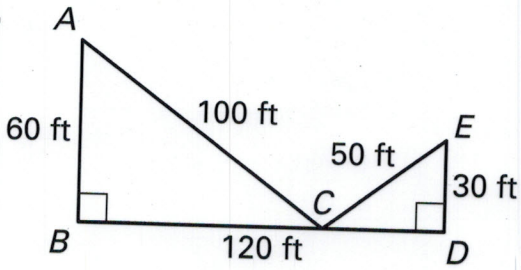
BC	40	50	60
AC	72.1	78.1	84.9
CE	85.4	76.2	67.1
AC + CE	157.6	154.3	152

BC	70	80	90
AC	92.2	100	108.2
CE	58.3	50	42.4
AC + CE	150.5	150	150.6

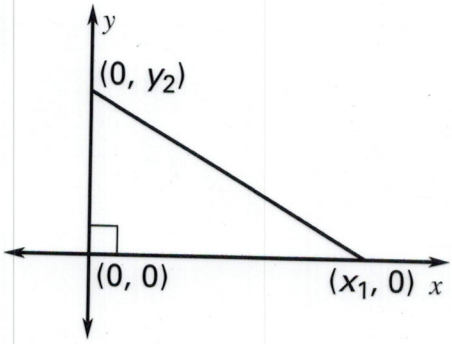
BC	100	110	120
AC	116.6	125.3	134.2
CE	36.1	31.6	30
AC + CE	152.7	156.9	164.2

b. 150 ft

c.

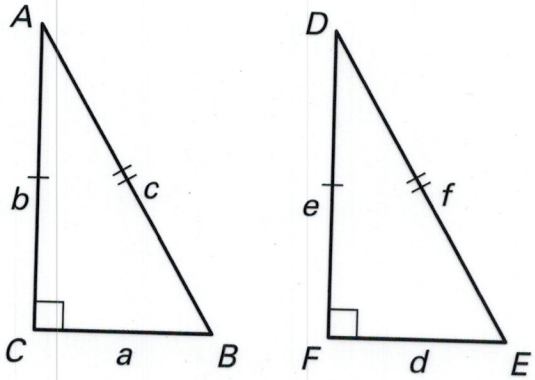


36.



By the Pythagorean Theorem, $(x_2 - x_1)^2 + (y_2 - y_1)^2 = d^2$ so $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.

37. *Sample answer:*



Given: $\triangle ABC$ and $\triangle DEF$ are right triangles; $\overline{AB} \cong \overline{DE}$, $\overline{AC} \cong \overline{DF}$.

Prove: $\triangle ABC \cong \triangle DEF$

38. ≈4.3ft

37. (cont.)

Statements (Reasons)

1. $\triangle ABC$ and $\triangle DEF$ are right triangles; $\overline{AB} \cong \overline{DE}$, $\overline{AC} \cong \overline{DF}$. (Given)
2. $c = f$, $b = e$ (Definition of segment congruence)
3. $a^2 + b^2 = c^2$, $d^2 + e^2 = f^2$ (Pythagorean Theorem)
4. $a^2 + b^2 = f^2$ (Substitution Property of Equality)
5. $a^2 + b^2 = d^2 + e^2$ (Substitution Property of Equality)
6. $a^2 + e^2 = d^2 + e^2$ (Substitution Property of Equality)
7. $a^2 = d^2$ (Subtraction Property of Equality)
8. $a = d$ (A property of square roots)
9. $\overline{BC} \cong \overline{EF}$ (Definition of segment congruence)
10. $\angle C \cong \angle F$ (Right Angle Congruence Theorem)
11. $\triangle ABC \cong \triangle DEF$ (SAS Congruence Postulate)

38. about 4.3 ft

7.1 Mixed Review

39. 7

40. 48

41. 2916

42. 128

43. 3 ft $< \ell <$ 9 ft

44. 6 in. $< \ell <$ 16 in.

45. 7 m $< \ell <$ 35 m

46. 15 in. $< \ell <$ 39 in.

47. 0 yd $< \ell <$ 36 yd

48. 12 m $< \ell <$ 66 m

49. similar; $\triangle A \sim \triangle B$, $\frac{2}{5}$

50. not similar

38)