For #1 & 2, determine if the 3 side lengths form a triangle. If so, classify the triangle as obtuse, right, or acute.

1) with sides 5, 7, and 8

Section 5.7 2) with sides 4, 5, and $\sqrt{41}$

For #3-7, determine the best way to find the missing side (Pythagorean Theorem/Triple, Special Right Triangle, or Trig).Then solve the problem! All answers should be EXACT and SIMPLIFIED unless you HAVE to use TRIG!

3) A 25 foot ladder just reaches a point on a wall 24 feet above the ground. How far is the foot of the ladder from the wall?   *Section 5.7*

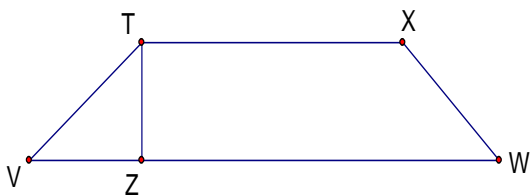4) What is the sum of the lengths of the diagonals of a 3-by-4 rectangle?

5) Find the altitude of the triangle below. *Section 5.8*

12 12

12

6) Find the perimeter of a square with diagonal of length 4.
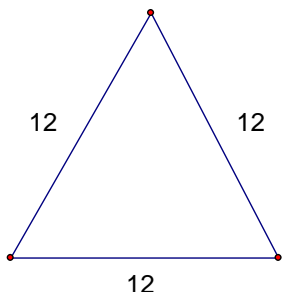
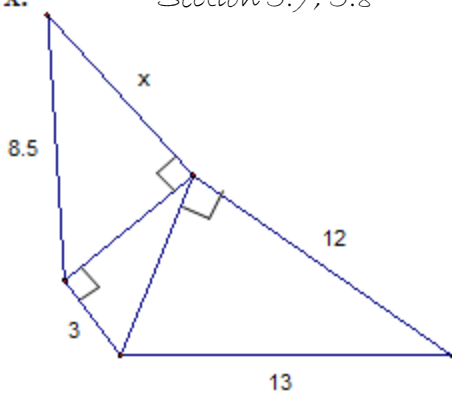7) Given: TVWX is an Isosceles Trapezoid
   TX = 8, VW = 12, $\angle V = 30°$

    Find: TV and TZ

Section 5.8

8) Find x.

8.5

x

12

3

13

Find the missing lengths of the following triangles for problems 9-17. You will need to use a combination of the Pythagorean Triples, 45 – 45 – 90, 30 – 60 – 90, and the Pythagorean Theorem if none of those work. A calculator is not needed for most problems. SHOW ALL WORK and leave answers as EXACT answers (simplified).

9)

34

16

10)
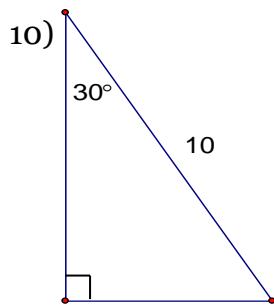
30°

10

11)

12

9

12)

12

14

13)

24

7

14)

45°

8

15)

14

48

16)

8

17)

30°

12

2
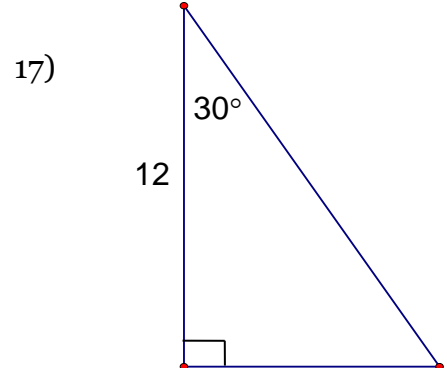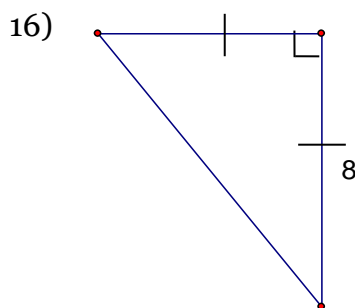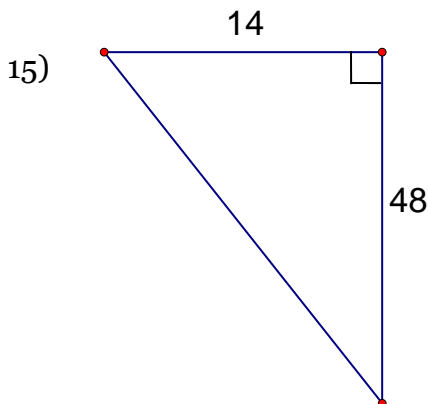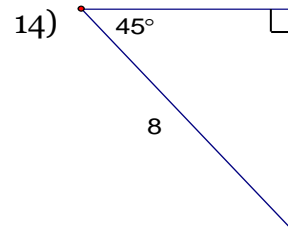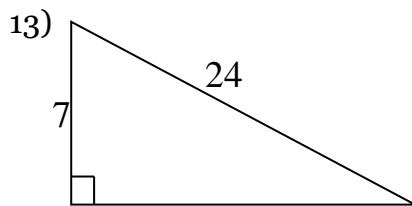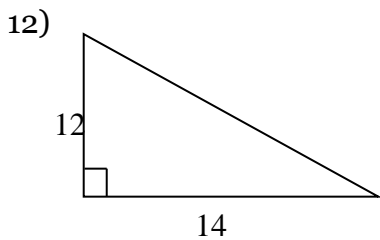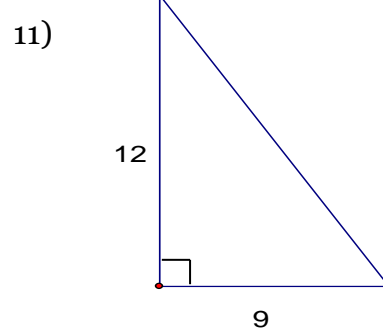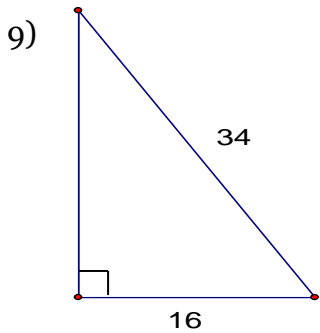
Use the figure for Exercises 18–23. Write each trigonometric ratio as a simplified fraction and as a decimal rounded to the nearest hundredth.
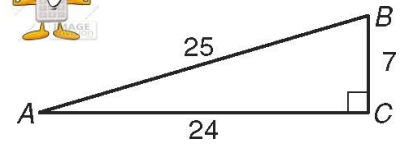
18) $\sin A$ 19) $\cos B$ 20) $\tan B$

_____   _____   _____

21) $\sin B$ 22) $\cos A$ 23) $\tan A$

_____   _____   _____

Use a calculator to find each trigonometric ratio. Round to the nearest hundredth.

24) $\sin 64°$ _____   25) $\cos 58°$ _____   26) $\tan 15°$ _____

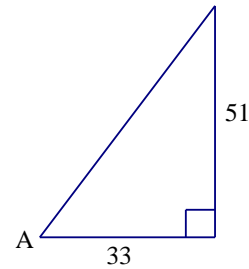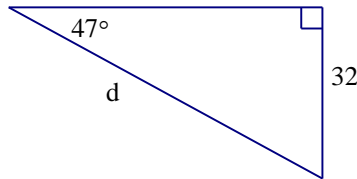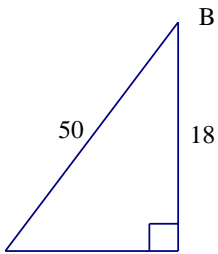**For #27-32, solve each problem for the specified missing angle or side. Show all work.**
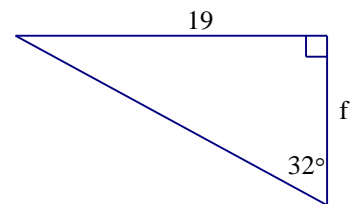
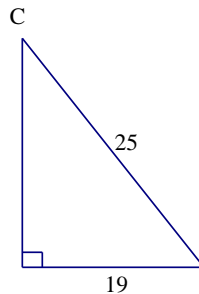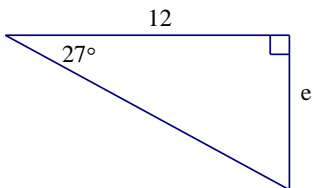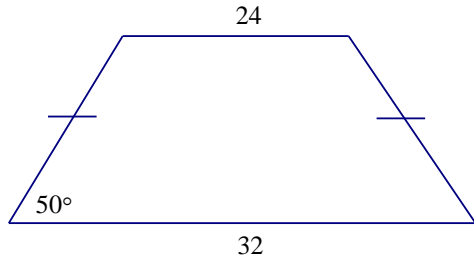27) Find $\angle B$ = _____   28) Find d = _____   29) Find $\angle A$ = _____
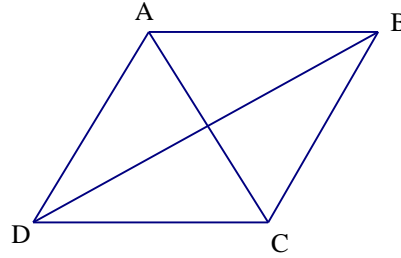
30) Find e = _____   31) Find $\angle C$ = _____   32) Find f = _____

3

33) Find the height of the isosceles trapezoid with the given measures.

24

50°

32

34) ABCD is a rhombus with a perimeter of 40 and m ∠ ABC = 48°. Find the length of AC.

A
B
D
C

35) A radio tower is 67 feet tall. If a wire from the top of the tower meets the ground at a 32˚ angle. How long is the wire?

36) If the angle of elevation to the sun at a certain time of the day is 48˚. Find the height of a tree whose shadow at that time of day is 28 meters.

37) From the top of a lighthouse, 170 feet above sea level, the angle of depression to a boat at sea level is 38˚. Find the distance from the boat to the base of the lighthouse.

38) A pilot flying at an altitude of 14,000 feet sights two airports directly in front of him. The angle of depression to one airport is 68˚, and the angle of depression to the second airport is 15˚. What is the distance between the two airports? Round to the nearest foot.

Airport #1   Airport #2

4