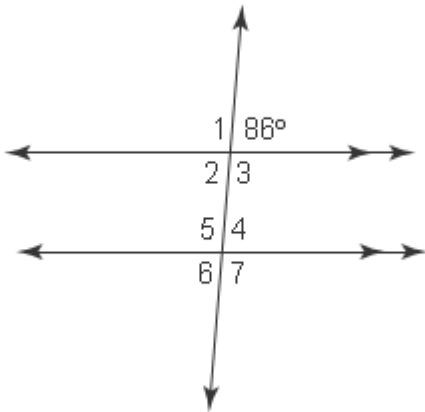**Chapter 5 Test 1 SG**

Indicate the answer choice that best completes the statement or answers the question.

1) **ALGEBRA** Angles *A* and *B* are corresponding angles formed by two parallel lines cut by a transversal. If $m\angle A = 4x$ and $m\angle B = 3x + 7$, find the value of *x*.

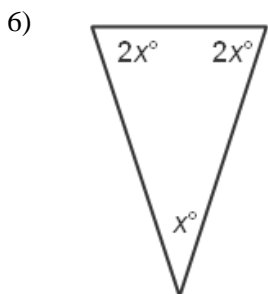**Use the figure below the find the measure of each angle. Explain your reasoning.**

2) Find the measure of $\angle 2$.

3) Find the measure of $\angle 3$.

4) Find the measure of $\angle 4$.

5) Find the measure of $\angle 6$.

ALGEBRA Find the value of *x* in the triangle.

6)

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Find the sum of the interior angle measures of the polygon.

7) 30-gon   8) decagon
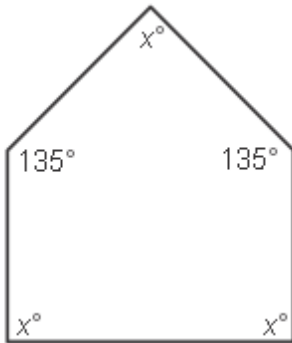
Find the measure of one interior angle in the regular polygon. Round to the nearest tenth if necessary.

9) pentagon   10) 24-gon
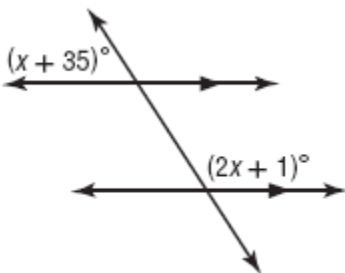
ALGEBRA Determine the angle measures in the polygon.

11)

12)

Find the value of x in each figure.

13)

14) Find the measure in degrees of an exterior angle of a regular decagon.
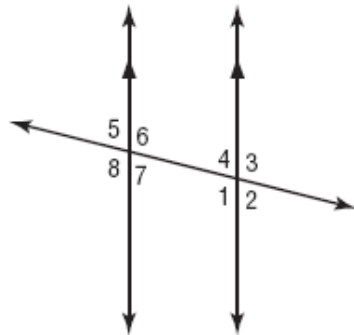
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15) The side view of a house (the "side elevation") is often in the shape of a pentagon. If the angle at the roof is 150° and there are two other angles of 90°, what is the sum of the measures, in degrees, of the other two angles?

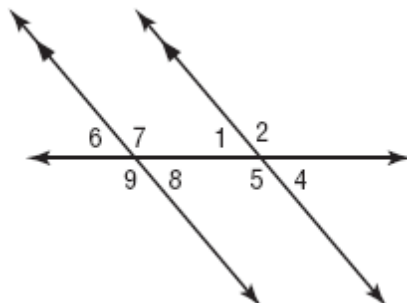**Find the value of x in each figure.**

16)

$x°$ $(x°+14°)$

$62°$

17)

$x°$

$23°$ $125°$
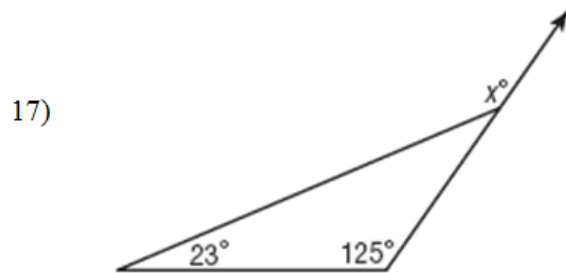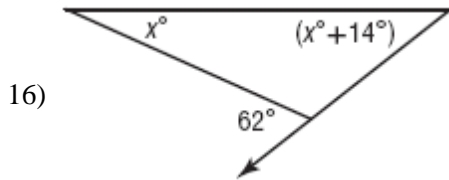
18) Which pair of angles is *not* congruent?

A) $\angle 1$ and $\angle 8$
B) $\angle 3$ and $\angle 5$
C) $\angle 4$ and $\angle 7$
D) $\angle 2$ and $\angle 5$

5 6
8 7
4 3
1 2

19) In the figure below, what is $m\angle 9 = 130°$, what is $m\angle 4$?

6 7   1 2
9 8   5 4

20) **GEOMETRY** The radius of a cylinder with volume V and height 10 centimeters is approximately $\sqrt{\dfrac{V}{30}}$. If a can that is 10 centimeters tall has a volume of 900 cubic centimeters, estimate its radius.

    A) 5 cm

    B) 6 cm

    C) 15 cm

    D) 30 cm

21) **TRAVEL** The formula $s = \sqrt{18d}$ can be used to find the speed s of a car in miles per hour when the car needs d feet to come to a complete stop after slamming on the brakes. If it took a car 12 feet to come to a complete stop after slamming on the brakes, estimate the speed of the car.
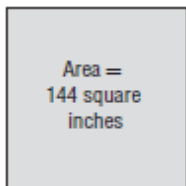
    A) 4 mph

    B) 14 mph

    C) 15 mph

    D) 16 mph

Estimate to the nearest integer.

22) $\sqrt{86.4}$

23) $\sqrt{38}$

24) **GEOMETRY The formula for the perimeter of a square is $P = 4s$, where s is the length of a side. Find the perimeter of the square.**

Area =
144 square
inches

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ALGEBRA Solve each equation. Check your solution(s).

25) $x^2 = \dfrac{81}{169}$

26) $\sqrt{z} = 8.4$

Find each root.

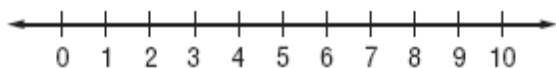27) $\pm\sqrt{\dfrac{121}{289}}$

28) $\sqrt[3]{\dfrac{27}{64}}$

29) $-\sqrt{3.24}$

30) Solve the equation $x^2 = 900$.

31) Estimate $\sqrt[3]{30}$ to the nearest whole number.

32) What is the value of $\sqrt[3]{1,000}$?

33) Graph $\sqrt{56}$ on the number line.

34) Without using a calculator, which is greater, 7 or $\sqrt[3]{345}$? Explain your reasoning.

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Answer Key

1) 7

2) Sample answer: 86°; ∠2 is vertical to the given angle.

3) Sample answer: 94°; ∠3 is supplementary to the given angle.

4) Sample answer: 86°; ∠4 is corresponding to the given angle.

5) Sample answer: 86°; ∠6 and the given angle are alternate exterior angles.

6) 36

7) 5,040°

8) 1,440°

9) 108°

10) 165°

11) 90°, 135°, 90°, 90°, 135°

12) 30°, 150°, 30°, 150°

13) 48°

14) 36°

15) 210°

16) 24°

17) 148

18) B

19) 50°

20) A

21) C

22) 9

23) 6

24) 48 in.

25) $\pm\dfrac{9}{13}$

26) 70.56

27) $\pm\dfrac{11}{17}$

28) $\dfrac{3}{4}$

29) −1.8

30) 30 or −30

31) 3

32) 10

33)
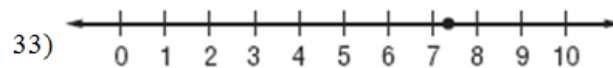
34) $\sqrt[3]{345}$; since $7^3 = 343$ and $345 > 343$