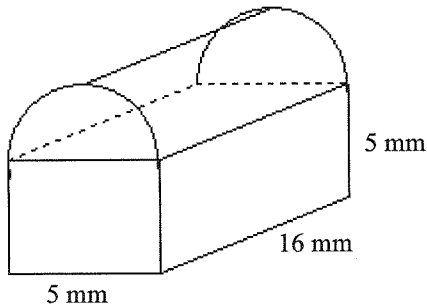Name: _____ Class: _____ Date: _____

Geometry Practice Final Exam - 2nd Semester

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.

_____ 1. Find the volume of the composite space figure to the nearest whole number.

5 mm

16 mm

5 mm

Not drawn to scale

    a.   714 mm³   b.   237 mm³   c.   450 mm³   d.   557 mm³

Find the area of the regular polygon. Give the answer to the nearest tenth.

_____ 2. decagon with side 4 cm
    a.   246.2 cm²   b.   123.1 cm²   c.   139.8 cm²   d.   129.4 cm²

_____ 3. A blueprint for a house has a scale of 1 : 5. A wall in the blueprint is 3 in. What is the length of the actual wall?
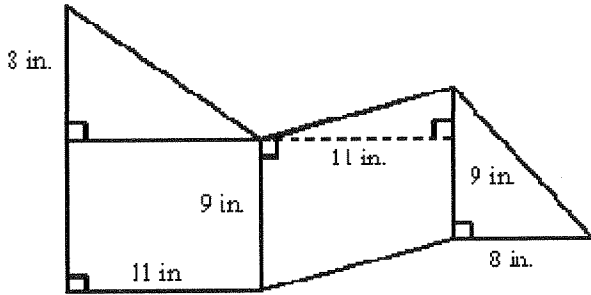   a.   1.25 feet   b.   1.25 in.   c.   15 feet   d.   180 feet

Find the area. The figure is not drawn to scale.
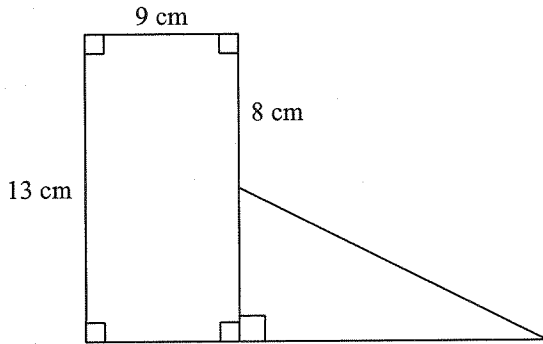
_____ 4.

5.8 cm

3.4 cm
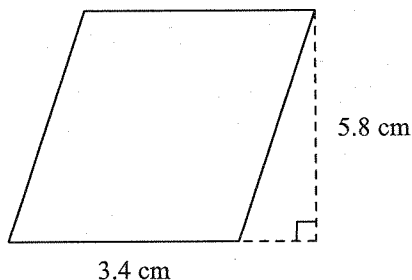
    a.   19.72 cm²   b.   2.4 cm²   c.   9.2 cm²   d.   39.44 cm²

_____ 5.

3 in.

11 in.

9 in.

9 in.

11 in

8 in.

a.   278 in.²   b.   322 in.²   c.   188 in.²   d.   none of these

_____ 6.

9 cm

8 cm

13 cm

9 cm   11 cm

a.   127 cm²   b.   172 cm²   c.   50 cm²   d.   144.5 cm²

_____ 7.

2 cm
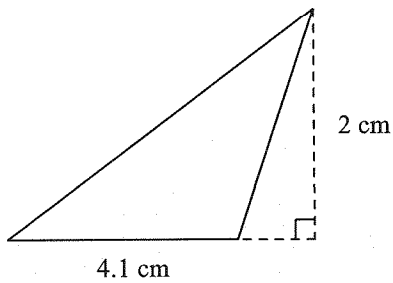
4.1 cm

a.   6.1 cm²   b.   8.2 cm²   c.   16.4 cm²   d.   4.1 cm²

_____ 8.

8 in.

7 in.   8 in.
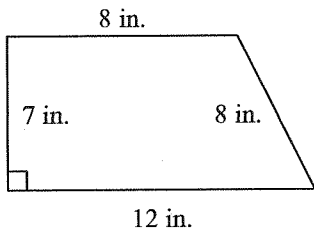
12 in.
Not drawn to scale

a.   75 in.²   b.   80 in.²   c.   77.2 in.²   d.   70 in.²

_____ 9.
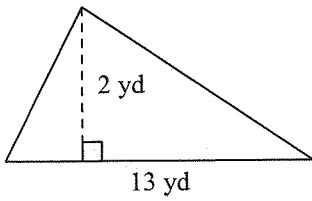
     a.   13 yd²   b.   7.5 yd²   c.   26 yd²   d.   15 yd²

_____ 10.
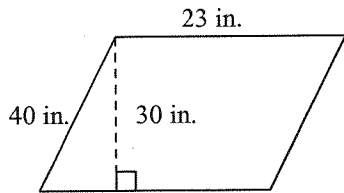
     a.   920 in.²   b.   690 in.²   c.   53 in.²   d.   106 in.²
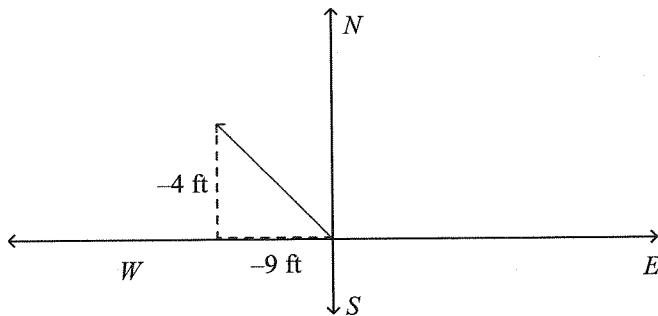
_____ 11.   Find the probability that a point chosen at random will lie in the shaded area.
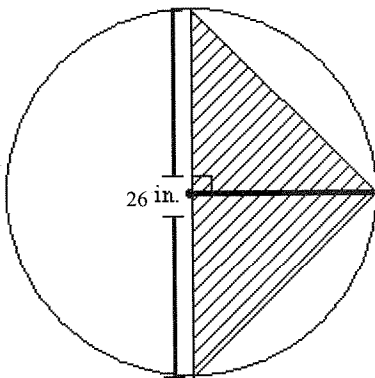
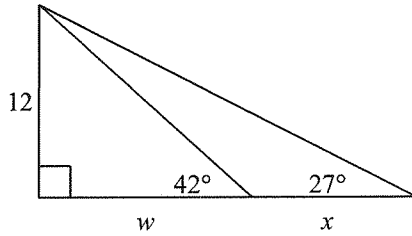   a.   0.42   b.   0.12   c.   0.83   d.   0.32

Find the magnitude and direction of the vector. Round length to nearest tenth and degree to the nearest unit. (Not drawn to scale)

_____ 12.

     a.   about 24 feet; 9.8° north of east   c.   about 9.8 feet; 24° north of east
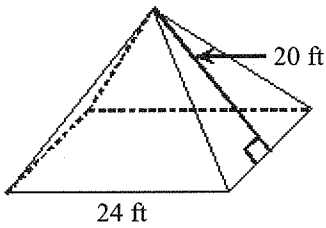   b.   about 9.8 feet; 24° north of west   d.   about 9.8 feet; 24° south of west

_____ 13. Find the value of w, then x. Round lengths of segments to the nearest tenth.

a. $w = 10.8, x = 16.9$

b. $w = 10.8, x = 6.1$

c. $w = 13.3, x = 23.6$

d. $w = 13.3, x = 10.2$

Find the volume of the square pyramid shown. Round to the nearest tenth as necessary.
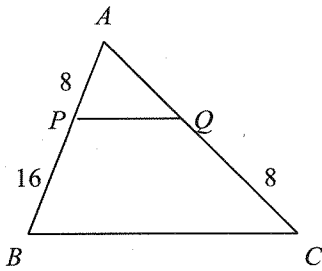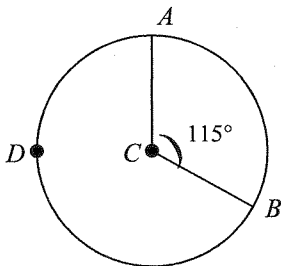
_____ 14.

Not drawn to scale

a. 192 ft^3

b. 9216 ft^3

c. 3072 ft^3

d. 4608 ft^3

_____ 15. Given: $PQ \parallel BC$. Find the length of $\overline{AQ}$. The diagram is not drawn to scale.

a. 4

b. 6

c. 8

d. 7

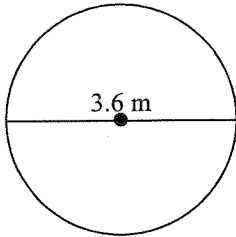_____ 16. Name the minor arc and find its measure.

a. arc AB; 245°

b. arc ADB; 30°

c. arc ADB; 245°

d. arc AB; 115°

Are the polygons similar? If they are, write a similarity statement and give the similarity ratio.

____ 17. In $\triangle QRS$, $QR = 4$, $RS = 15$, and $m\angle R = 36$. In $\triangle UVT$, $VT = 8$, $TU = 32$, and $m\angle T = 36$.

   a. $\triangle RSQ \sim \triangle TUV; \dfrac{1}{2}$ c. $\triangle QRS \sim \triangle VTU; \dfrac{15}{32}$

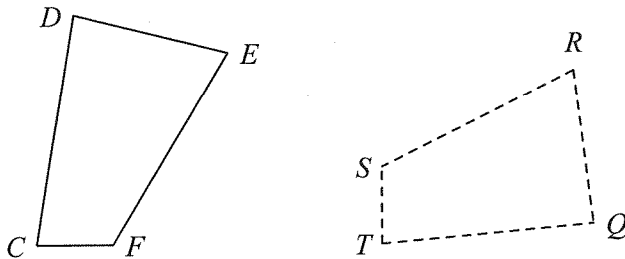   b. $\triangle SRQ \sim \triangle UTV; \dfrac{1}{2}$ d.   The triangles are not similar.

Find the area of the circle. Leave your answer in terms of π.

____ 18.

3.6 m

   a. 12.96π m^2 b. 6.48π m^2 c. 10.2π m^2 d. 3.24π m^2
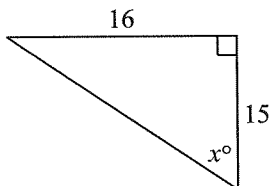
In the diagram, the dashed figure is the image of the solid figure.

____ 19. Name the image of $\angle D$.

   a. $\angle T$ b. $\angle R$ c. $\angle F$ d. $\angle Q$
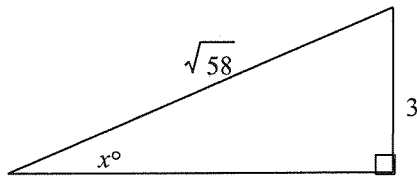
Find the value of x to the nearest degree.

____ 20.

16

15

$x°$

Not drawn to scale

   a.   43   b.   69   c.   47   d.   56

_____ 21.

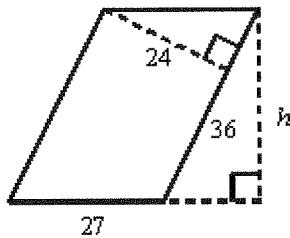   a.   53   b.   67   c.   23   d.   83

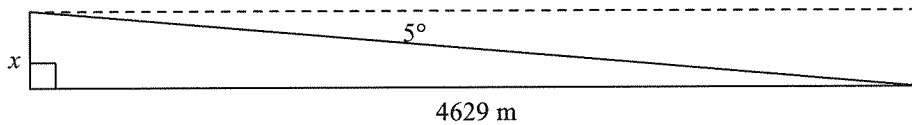_____ 22. Find the value of h in the parallelogram.

Not drawn to scale

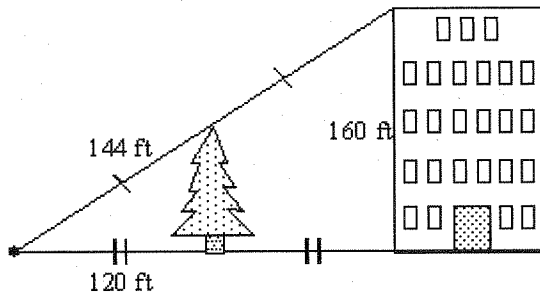   a.   28   b.   40.5   c.   35   d.   32

_____ 23. An airplane over the Pacific sights an atoll at an angle of depression of 5°. At this time, the horizontal distance from the airplane to the atoll is 4629 meters. What is the height of the plane to the nearest meter?

Not drawn to scale

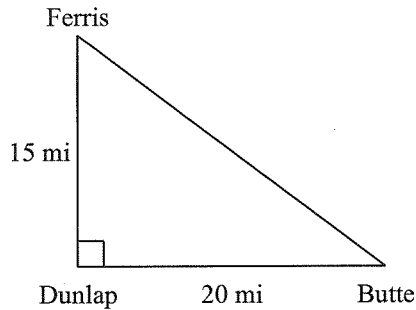   a.   4611 m   b.   403 m   c.   405 m   d.   4647 m

_____ 24. Use the information in the diagram to determine the height of the tree to the nearest foot.

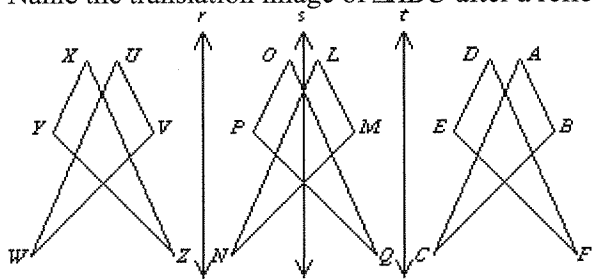   a.   264 ft   b.   80 ft   c.   72 ft   d.   60 ft

_____ 25. Wayne used the diagram to compute the distance from Ferris to Dunlap to Butte. How much shorter is the distance directly from Ferris to Butte than the distance Wayne found?

Ferris

15 mi

Dunlap   20 mi   Butte

a.   25 mi   b.   10 mi   c.   35 mi   d.   20 mi

_____ 26. Name the translation image of $\triangle ABC$ after a reflection over line t and then a reflection over line r.

a. $\triangle LMN$ b. $\triangle XYZ$ c. $\triangle DEF$ d. $\triangle UVW$

_____ 27. A sign is in the shape of a rhombus with a 60° angle and sides of 7 cm long. Find its area to the nearest tenth.
a.   42.4 cm²   b.   3 cm²   c.   21.2 cm²   d.   6.1 cm²

_____ 28. Find the length of the altitude drawn to the hypotenuse. The triangle is not drawn to scale.

6   17
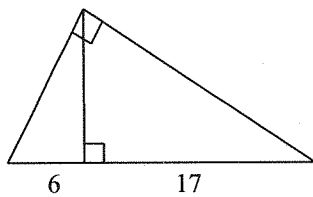
a. $\sqrt{23}$ b.   23   c. $\sqrt{102}$ d.   102

_____ 29. A large totem pole in the state of Washington is 100 feet tall. At a particular time of day, the totem pole casts a 249-foot-long shadow. Find the measure of $\angle A$ to the nearest degree.
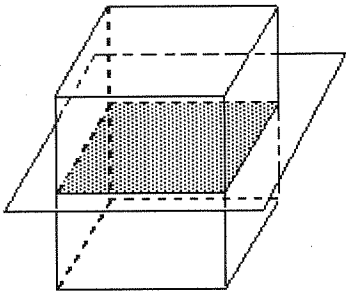
100 ft

A

249 ft
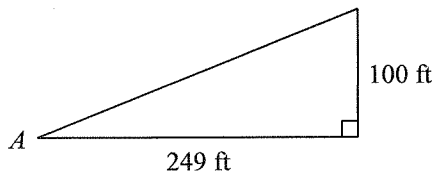
a.   35°   b.   68°   c.   45°   d.   22°

_____ 30. Use Euler's Formula to find the missing number.
Faces: 25
Vertices: 12

Edges: �®

a. 34 b. 38 c. 36 d. 35

Describe the cross section.

_____ 31.

a. cube b. square c. trapezoid d. pentagon

_____ 32. The students in Mr. Collin's class used a surveyor's measuring device to find the angle from their location to the top of a building. They also measured their distance from the bottom of the building. The diagram shows the angle measure and the distance. To the nearest foot, find the height of the building.
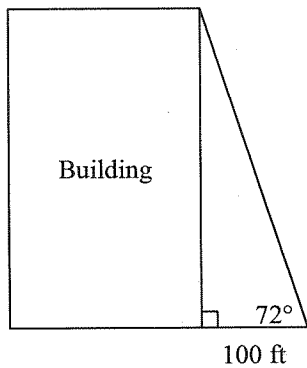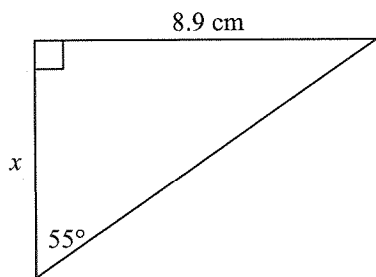

a. 33 ft b. 2400 ft c. 308 ft d. 72 ft

_____ 33. In the circle, $m(\text{arc } AD) = 70$, and $m\angle D = 83$. Find $m\angle DCQ$.
(The figure is not drawn to scale.)
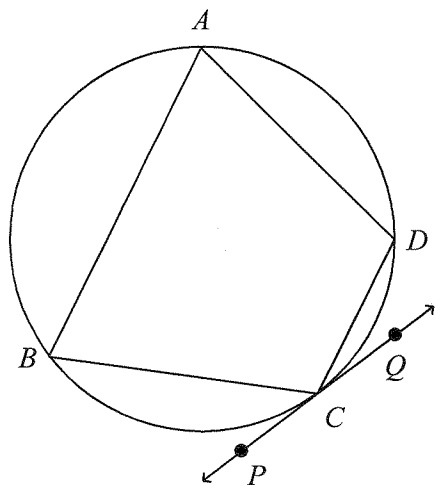
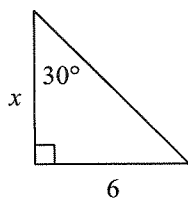a.   124   b.   103.5   c.   62   d.   207

Find the value of x. Round your answer to the nearest tenth.

_____ 34.

a.   12.7 cm   b.   10.9 cm   c.   6.2 cm   d.   15.5 cm
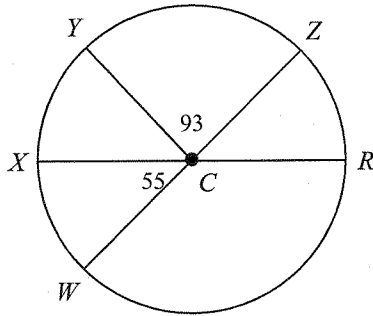
_____ 35.

Not drawn to scale

a.   3.5   b.   5.2   c.   3   d.   10.4

_____ 36. $\overline{WZ}$ and $\overline{XR}$ are diameters. Find the measure of arc ZWX. (The figure is not drawn to scale.)


a. 328   b. 273   c. 32   d. 235

The figures are similar. The area of one figure is given. Find the area of the other figure to the nearest whole number.

_____ 37. A rectangular napkin costs $3.25. A similar tablecloth is five times longer and five times wider. How much would you expect to pay for the tablecloth?
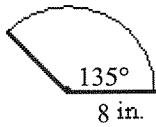a. $48.75   b. $32.50   c. $81.25   d. $16.25

Solve the proportion.

_____ 38. $\dfrac{7}{8} = \dfrac{m}{40}$

a. $\dfrac{7}{5}$ b. 35   c. 5   d. $\dfrac{1}{35}$

_____ 39. If the figure has rotational symmetry, find the angle of rotation about the center that results in an image that matches the original figure.
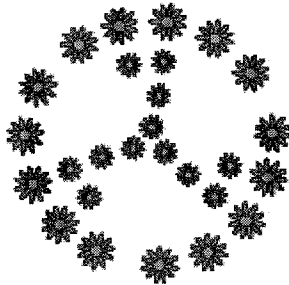
a. no symmetry   b. 90°   c. 210°   d. 120°

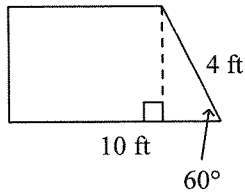Name: _____

ID: A

_____ 40. Find the area of the figure to the nearest tenth.

135°
8 in.

a. 24 in.²   b. 9.4 in.²   c. 150.7 in.²   d. 75.4 in.²

Find the area of the trapezoid. Leave your answer in simplest radical form.

_____ 41.

4 ft

10 ft

60°

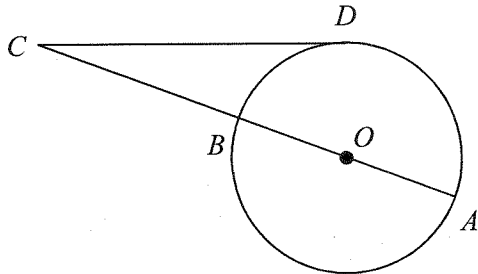Not drawn to scale

a. $16\sqrt{3}$ ft²   b. $18\sqrt{3}$ ft²   c. $20\sqrt{3}$ ft²   d. $9\sqrt{3}$ ft²

_____ 42. The volume of a sphere is 5000π m³. What is the surface area of the sphere to the nearest square meter?

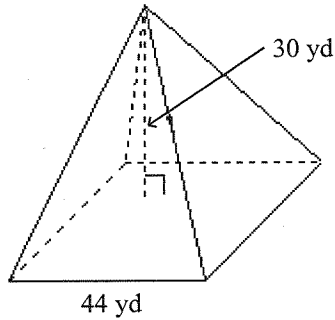a. 195 m²   b. 62,832 m²   c. 3033 m²   d. 1517 m²

_____ 43. Find the diameter of the circle for $BC = 17$ and $DC = 26$. Round to the nearest tenth. (The diagram is not drawn to scale.)

D

C

B

O

A

a. 56.8   b. 22.8   c. 15.5   d. 39.8

11

_____ 44. Find the lateral area of the pyramid shown to the nearest whole number.

30 yd

44 yd

Not drawn to scale

a. 3274 yd^2 b. 2640 yd^2 c. 4686 yd^2 d. 6548 yd^2

_____ 45. You are planning to use a ceramic tile design in your new bathroom. The tiles are blue and white equilateral triangles. You decide to arrange the blue tiles in a hexagonal shape as shown. If the side of each tile measures 5 centimeters, what will be the exact area of each hexagonal shape?
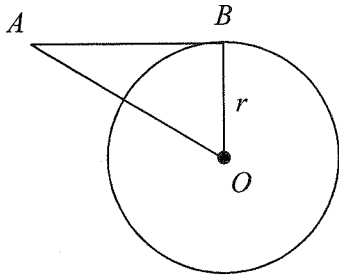

5 cm
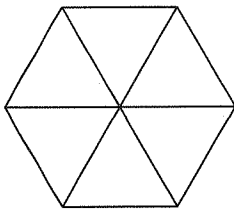
a. $50\sqrt{3}$ cm^2 b. $37.5\sqrt{3}$ cm^2 c. 375 cm^2 d. 15 cm^2

_____ 46. Write the ratios for sin A and cos A.

A

8
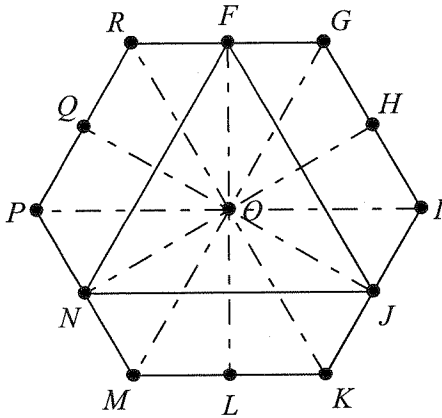
C

15

17

B
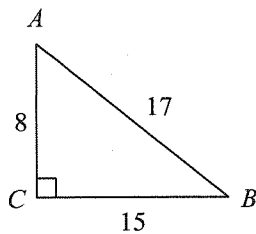
Not drawn to scale

a. $\sin A = \dfrac{15}{8}, \cos A = \dfrac{8}{17}$

b. $\sin A = \dfrac{15}{17}, \cos A = \dfrac{8}{17}$

c. $\sin A = \dfrac{15}{17}, \cos A = \dfrac{8}{15}$

d. $\sin A = \dfrac{8}{17}, \cos A = \dfrac{15}{17}$

_____ 47. $\overline{AB}$ is tangent to circle O at B. Find the length of the radius r for $AB = 10$ and $AO = 11.7$. Round to the nearest tenth if necessary. The diagram is not to scale.

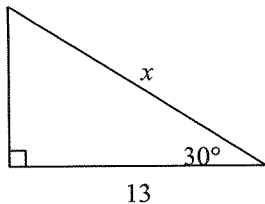   a.   15.4   b.   2.9   c.   6.1   d.   1.7

The hexagon *GIKMPR* and △*FJN* are regular. The dashed line segments form 30° angles.

_____ 48. Find the angle of rotation about O that maps $\overline{NP}$ to $\overline{FG}$.
    a.   270°   b.   120°   c.   210°   d.   240°

Find the value of *x*. Round to the nearest tenth.

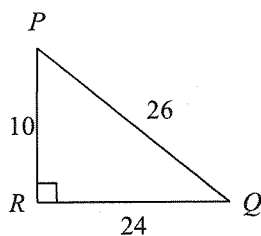_____ 49.

Not drawn to scale

    a.   15   b.   11.7   c.   11.3   d.   15.5

_____ 50. Write the tangent ratios for $\angle P$ and $\angle Q$.

Not drawn to scale

a. $\tan P = \dfrac{26}{10}$; $\tan Q = \dfrac{10}{26}$

b. $\tan P = \dfrac{26}{24}$; $\tan Q = \dfrac{24}{26}$

c. $\tan P = \dfrac{10}{24}$; $\tan Q = \dfrac{24}{10}$

d. $\tan P = \dfrac{24}{10}$; $\tan Q = \dfrac{10}{24}$