Name_____

ID: 1

REVIEW Semester 2 Exam

Date_____ Period_____

Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

1)

9 ft x
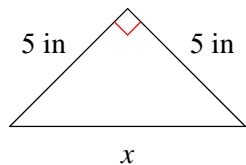
15 ft

2)

12.1 m

9.8 m

x
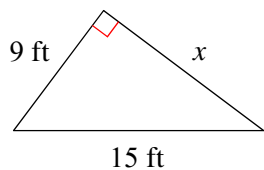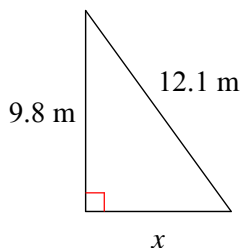
Find the missing side of each triangle. Leave your answers in simplest radical form.
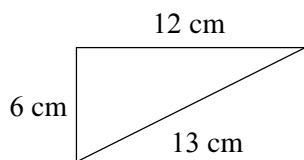
3)

5 in   5 in

x

4)

14 cm

6 cm x
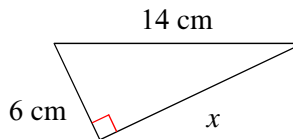
State if each triangle is acute, obtuse, or right.

5)

12 cm

6 cm

13 cm

6)

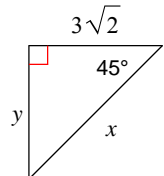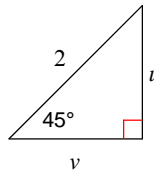20 in

12 in

9 in
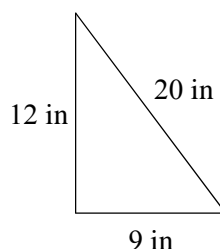
Find the missing side lengths. Leave your answers as radicals in simplest form.

7)

$3\sqrt{2}$

45°

y x

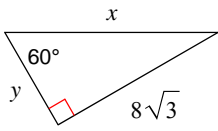8)

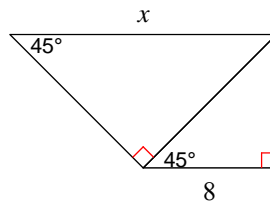2 u

45°
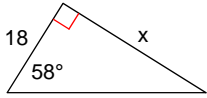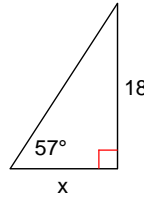
v

9)

x

$60°$

y

$8\sqrt{3}$

10)

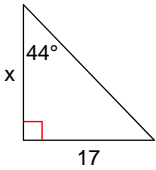

x

$45°$

$45°$

8

Find the missing side. Round to the nearest tenth.

11)

18

x

58°

12)

18

57°

x

13)

44°

x

17

14)

x

71°

19
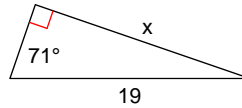
Find the measure of the indicated angle to the nearest degree.

15)

?

5

4

16)

51

?

68

85
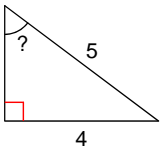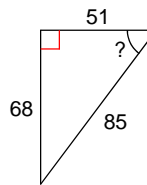
For each situation draw a picture and then solve. Round to the nearest tenth if necessary.

17) What is the angle of depression between a woman in a hot air balloon that is 50 feet off the ground and her friend that is 100 feet from being directly underneath the balloon.

18) A slide on the playground starts 12 feet off the ground and has an angle of elevation with the ground of 25°. How long is the slide?

Graph the image of the figure using the transformation given.

19) translation: $(x, y) \rightarrow (x + 6, y + 3)$

20) reflection across the y-axis

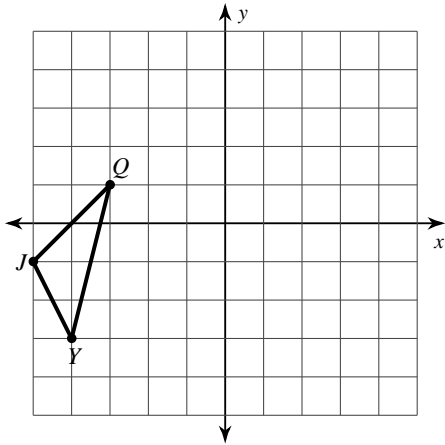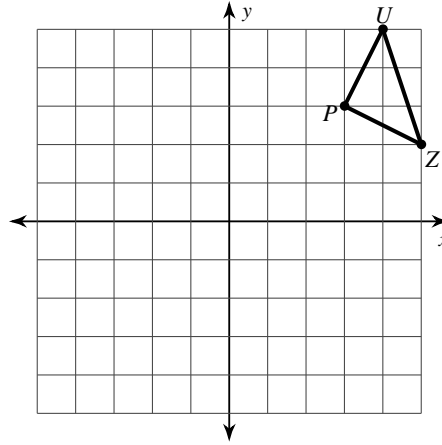**Give the line of reflection (equation or axis) for the transformations below:**

21)

22)

Find the area of each. Use your calculator's value of π. Round your answer to the nearest tenth.

23) circumference = 31.4 mi

24)

16.4 cm

Find the area of each.

25)

12 mi

13.6 mi

10.7 mi

12 mi

26)

2.6 in

0.9 in   0.9 in

2.6 in

27)

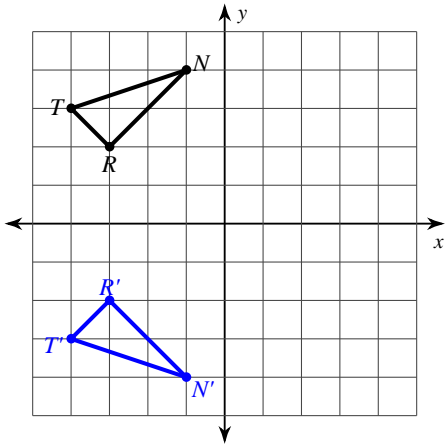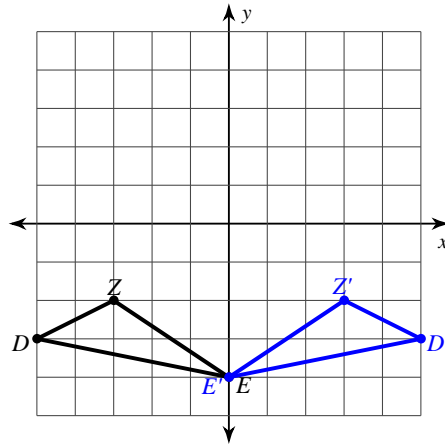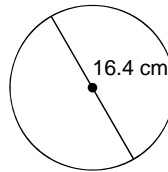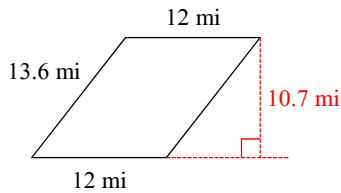4.1 yd

5 yd

8.9 yd

28)

11 ft

4.4 ft

6 ft
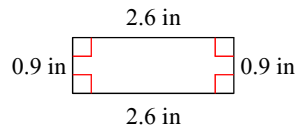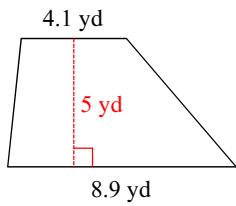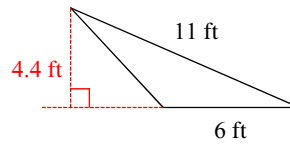
Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

29) $m\angle FKI$

J

F

62°

I

94°

K

50°

110°

H

G

30) $m\widehat{TVS}$

S

80°

T

55°

W

U

V
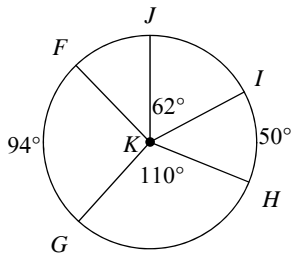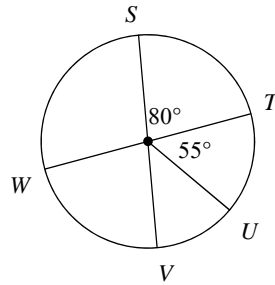
Find the area of each regular polygon. Round your answer to the nearest tenth if necessary.

31)

9.6

14

32)

7 mi
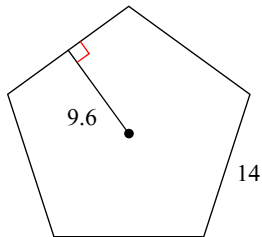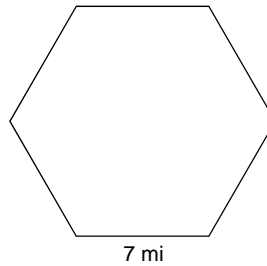
Find the length of each arc. Round your answers to the nearest tenth.

33)

12 yd

315°

Find the length of each arc. Leave in terms of pi.

34)

10 cm

60°
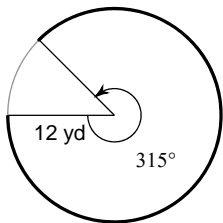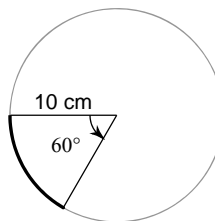
Find the area of each sector. Round your answers to the nearest tenth.

35)
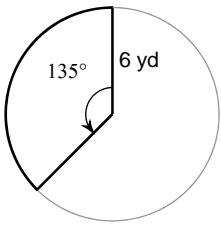
135° 6 yd

Find the surface area of each figure. Round your answers to the nearest hundredth, if necessary.

36)
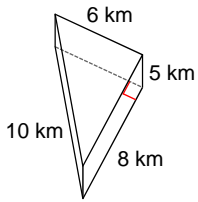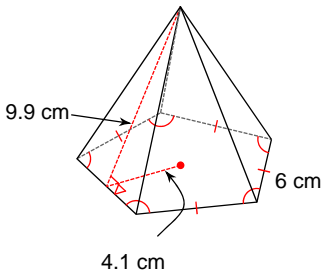
6 km
5 km
10 km
8 km

37)

6 mi
4 mi
5.2 mi

38)

9.9 cm
6 cm
4.1 cm

Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

39)

8 yd
12 yd   12 yd

Find the surface area of each figure. Round your answers to the nearest hundredth, if necessary. Leave your answers in terms of π for answers that contain π.

40)

11 yd
7 yd

Find the volume of each figure. Round your answers to the nearest hundredth, if necessary. Leave your answers in terms of π for answers that contain π.

41)

20 m

20 m

42)

15.4 ft
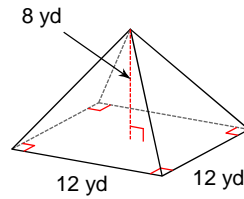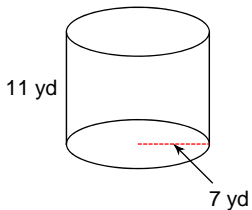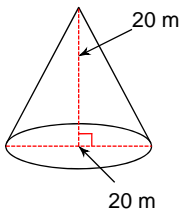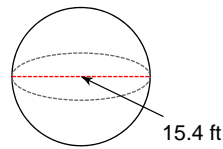
Find the coordinates of the vertices of each figure after the given transformation.

43) rotation 90° counterclockwise about the origin

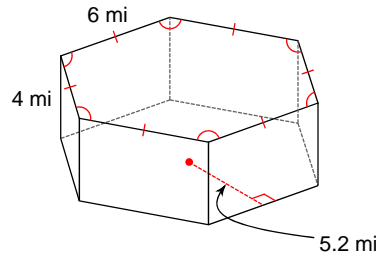$E(2, -3), Z(2, 1), M(5, 1)$

Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.

44)

7.7

x

20.6

Solve for x.

45)

P

$9x + 1$

Q

$16x + 4$

R

46)

X

58°

W

V
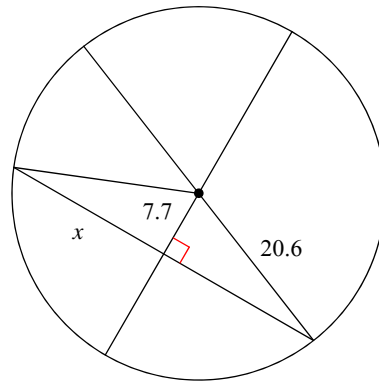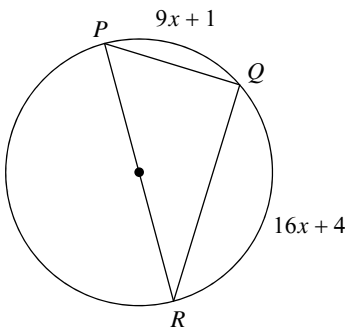
$10x + 6$
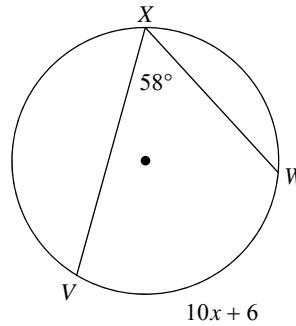
Solve for x. Assume that lines which appear tangent are tangent.

47)

30

18

x

48)

7

9

x

8

49) Find $m\overset{\frown}{ST}$

S
9x + 3
D
8x + 7
R
T
81°
U

50) Find $m\angle STU$

22x − 12
S
10x + 20
U
4x + 6
T
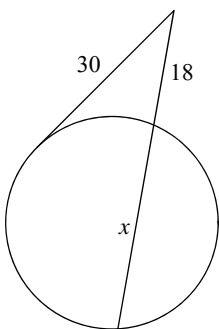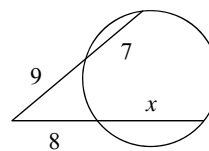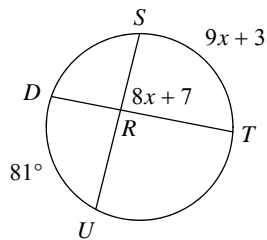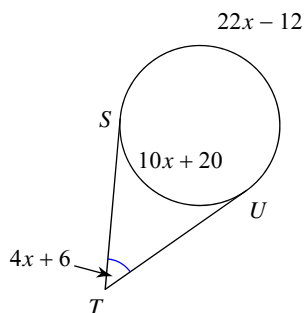
A bag contains 24 red marbles, 17 maroon marbles, and 8 blue marbles. Find the following probabilities.

51) P(picking a maroon marble)

52) P(not selecting a red marble)

53) 68% of DoDDS students return to the same school the following year. If Mr. Sullivan has 128 students, about how many of them should he expect to return next year?

54) What's the probability of picking two diamonds from a standard deck of cards when you do not put the first card back in the deck before picking the second card?

A certain game requires you to pick a marble out of a bag that contains 10 red marbles and 5 white marbles and to to throw a 9-sided die.

55) A person wins if they pick a red marble and roll an even number. Find P(winning).

56) A person wins if they pick a red marble or roll an even number. Find P(winning).

UNIT 7: Mr. Brust is building his own house deep in the woods of Germany. He wants to be in an area that is all by himself because he doesn't play well with others. He builds the south wall of his house to be 25 feet high and perpendicular to floor which will be 60 feet long. He's running out of funds so instead of building a normal house with 4 sides, his house is going to have 3 sides. That means the last side will be a slanted roof.

a) Draw a picture, labeled correctly, of this situation (2 points).

b) Mr. Brust goes to the store and buys wood to build the slanted roof to be 65 feet long. Did he buy the correct amount of wood for the roof?

UNIT 8:

a. Graph J'E'T', the image of J(1, 4), E(2, 0), T(1, 5) after a translation using the rule (x,y) → (x - 3, y -1).

b.. Graph and label J"E"T", the image of J'E'T', after a reflection in the y-axis.
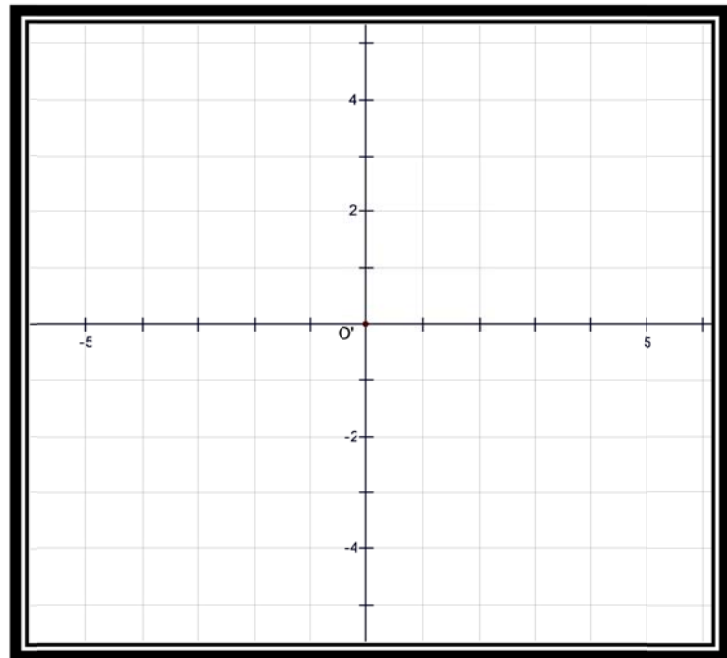
UNIT 9:

Plot the points to make a quadrilateral. M(3,-1), A(0,3), T(3,7), and H(6,3).

Name the quadrilateral and find its area.

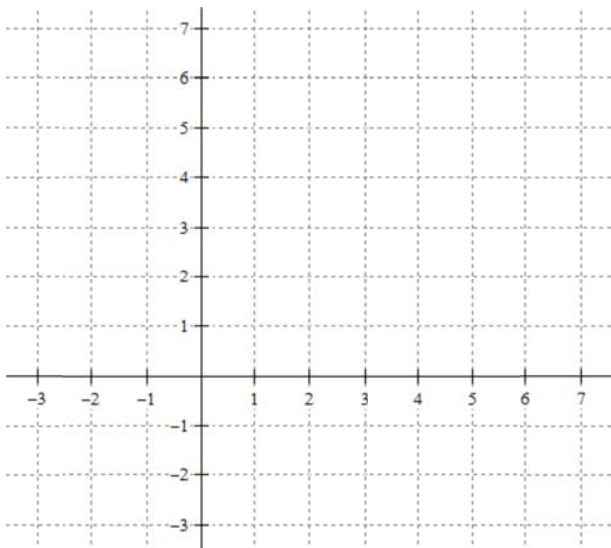<u>UNIT 10</u>: Mr. Sullivan and Mr. Kelly wanted to throw Mr. Brust a Beach themed party for winning Teacher of the Year. They decided to fill his room up 3 feet high and know his room is 23 feet long and 20 feet wide. Sully buys bags of sand that are .5 feet high, 2.5 feet long and 2 feet wide.

    a) What's the volume of the space to have sand?

    b) What's the volume of one sand bag?

    c) How many sand bags do they need to buy?

<u>Unit 11</u>

1. A chord of 48 cm is 32cm from the center of a circle. **Calculate the area** of the circle to the nearest tenth.

2. Brust is riding in a hot air-balloon at an altitude of about 1.5 mi above the Earth. **How far is Brust from the furthest point on the Earth that he can see?** Remember, the Earth's diameter is approximately 7920 miles.

UNIT 12: DEEP IMPACT…the terrible movie…was about a meteor hitting the Earth. Well, that terrible, terrible movie was right…and there's a meteor headed straight at us. It's definitely going to hit the United States (3,679,245 square miles). What's the probability it will land in Wyoming (97, 813 square feet) which is the least populated state**?**

What's the probability it will land in Alaska, which is the biggest state (663,267 square miles)?