Name Kelly Date Class

CHAPTER 9

Section Quiz

Lessons 9-1 Through 9-3

Choose the best answer.

1. What is the height of a triangle whose base is 9.4 centimeters and whose area is 132.54 square centimeters?

   A 7.05 cm C 28.2 cm B 14.1 cm D 42.3 cm

2. The diagonals of a kite are 22 feet and 33 feet long. What is its area?

   F 363 ft² H 756.25 ft² G 726 ft² J 1452 ft²

3. A walkway along the diagonal of a square park is $\frac{4}{5}$ mile long. What is the area of the park?

   A $\frac{8}{25}$ mi² C $\frac{4}{5}$ mi² B $\frac{16}{25}$ mi² D $1.6\sqrt{2}$ mi²

4. Bryce has 220 feet of fencing that will enclose a rectangular corral. One side of the corral will be 48 feet long. What will be the area of the corral?

   F 1488 ft² H 2976 ft² G 2304 ft² J 8256 ft²

5. What is the circumference of a circle whose area is 121π square meters?

   A 5.5 m C 22 m B 5.5π m D 22π m

6. What is the diameter of a circle whose circumference is 16π centimeters?

   F 4 cm H 16 cm G 8 cm J 32 cm

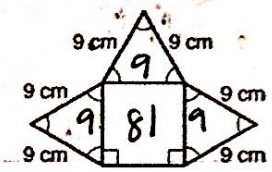
7. What is the area of a regular hexagon whose perimeter is 24 feet?

   A $24\sqrt{3}$ ft² C $72\sqrt{3}$ ft² B $48\sqrt{3}$ ft² D $96\sqrt{3}$ ft²

8. What is the area of a regular octagon having an apothem of 6 meters and a side length of 5 meters?

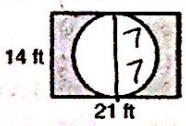
   F 15 m² H 240 m² G 120 m² J 480 m²

9. What is the area of the figure to the nearest tenth?



   A 140.3 cm² C 175.4 cm² B 141.8 cm² D 186.2 cm²

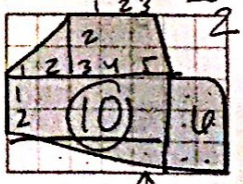
10. What is the area of the shaded region to the nearest tenth of a foot?



    F 140.1 ft² H 447.9 ft² G 294.0 ft² J 601.9 ft²

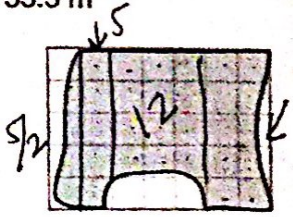
For Exercises 11 and 12, choose the best estimate for the area of the shaded region.

11. Side lengths of grid squares are 1 meter.



    A 27.75 m² C 35 m² B 30.5 m² D 55.5 m²

12. Side lengths of grid squares are 1 inch.



    F 25 in² H 36 in² G 29 in² J 40 in²

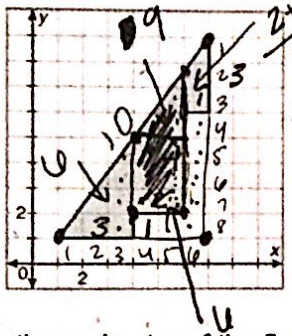
CHAPTER 9

Section Quiz

Lessons 9-4 Through 9-6

Choose the best answer.

Use the figure for Exercises 1 and 2.



1. What is the perimeter of the figure?

   A 21 units C 26 units

   B 24 units D 29 units

2. What is the area of the figure?

   F 12 units^2 H 17 units^2

   G 16 units^2 J 24 units^2

3. The area of a circle is 96 square inches. What is the area of a circle whose diameter is 1.5 times the diameter of the circle?

   A 48 in^2 C 144 in^2

   B 64 in^2 D 216 in^2

4. A map has the scale of 2 centimeters = 1 kilometer. On a map, the area of a forest preserve is 3.8 square centimeters. What is the area of the actual forest preserve?

   F 0.95 km^2 H 7.6 km^2

   G 1.9 km^2 J 15.2 km^2

5. A pet store runs a monthly magazine ad that is 2 inches wide and 6 inches long and costs $366. The cost of each ad is based on its area. If the pet store manager decides to triple the width of the ad, how much will the new ad cost?

   A $457.50 C $1098

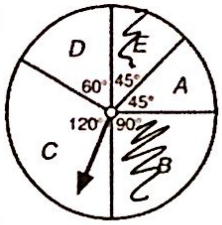
   B $549 D $3294

6. The perimeter of a rectangle is p units. If its length and width are tripled, what is the perimeter of the new rectangle?

   F $p + 12$ units H $p + 6$ units

   G $3p$ units J $9p$ units

7. What is the probability that the spinner lands on B or E?



   A 0.135 C 0.45

   B 0.375 D 0.6

8. A stoplight has the following cycle: green for 90 seconds, yellow for 10 seconds, and red for 60 seconds. What is the probability that the light will be red for a car approaching the stoplight?

   F $\frac{1}{60}$ H $\frac{3}{5}$

   G $\frac{3}{8}$ J $\frac{5}{8}$

9. The blue region of the Texas flag is one-third the width, and the red and white stripes are each half the height. What is the probability that a butterfly landing on the flag lands on red?

   A $\frac{1}{4}$ C $\frac{1}{2}$

   B $\frac{1}{3}$ D $\frac{2}{3}$

Describe the effect of each change on the perimeter or circumference and area of the given figure.

31. The base and height of the triangle with vertices $X(-1, 3)$, $Y(-3, -2)$, and $Z(2, -2)$ are tripled.

Area: x9 perimeter: x3

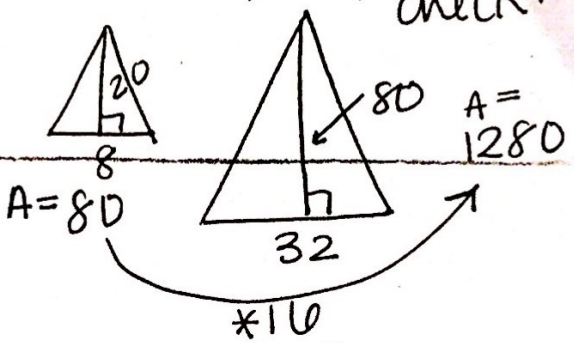
32. The side length of the square with vertices $P(-1, 1)$, $Q(3, 1)$, $R(3, -3)$, and $S(-1, -3)$ is doubled. Area: x4 perimeter: x2

33. The radius of $\odot A$ with radius 11 m is multiplied by $\frac{1}{2}$. Area: x 1/4 perimeter: x 1/2 → called circumference

34. The base and height of a triangle with base 8 ft and height 20 ft are both multiplied by 4.

Area: x 16
perimeter: x 4

*draw example to check.



34. The base and height of a triangle with base 8 ft and height 20 ft are both multiplied by 4.

33. The radius of $\odot A$ with radius 11 m is multiplied by $\frac{1}{2}$.

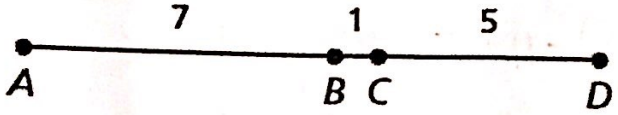
32. The side length of the square with vertices $P(-1, 1)$, $Q(3, 1)$, $R(3, -3)$, and $S(-1, -3)$ is doubled.

31. The base and height of the triangle with vertices $X(-1, 3)$, $Y(-3, -2)$, and $Z(2, -2)$ are tripled.

Describe the effect of each change on the perimeter or circumference and area of the given figure.

Key

A point is chosen randomly on $\overline{AD}$. Find the probability of each event.



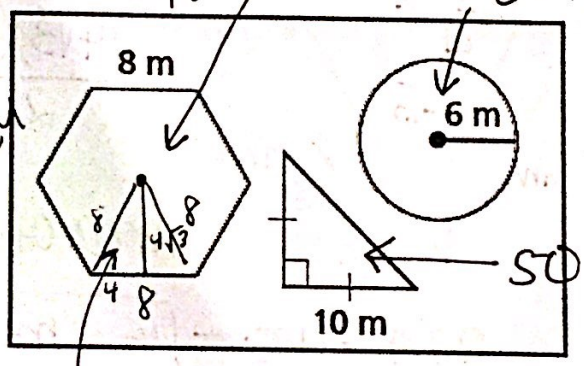
35. The point is on $\overline{AB}$. 7/13

36. The point is not on $\overline{CD}$. 8/13

37. The point is on $\overline{AB}$ or $\overline{CD}$. 12/13

38. The point is on $\overline{BC}$ or $\overline{CD}$. 6/13

Find the probability that a point chosen randomly inside the 40 m by 24 m rectangle is in each shape. Round to the nearest hundredth.



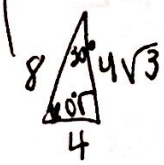
39. the regular hexagon

40. the triangle

41. the circle or the triangle

42. inside the rectangle but not inside the hexagon, triangle, or circle

40 1666.3 36π



$P = 8 \times 16 = 48$

a = apothem $= 4\sqrt{3}$

$A = \frac{48(4\sqrt{3})}{2}$

(39) $\frac{\text{green} + 1666.3}{960} =$ .173

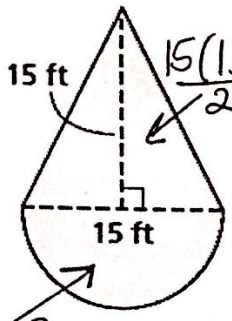
(40) $\frac{50}{960} =$ .052

(41) $\frac{36\pi + 1666.3}{960} =$ .29

(42) $\frac{960 - 1666.3 - 36\pi - 50}{960}$ .666

Find the shaded area. Round to the nearest tenth, if necessary.

18.



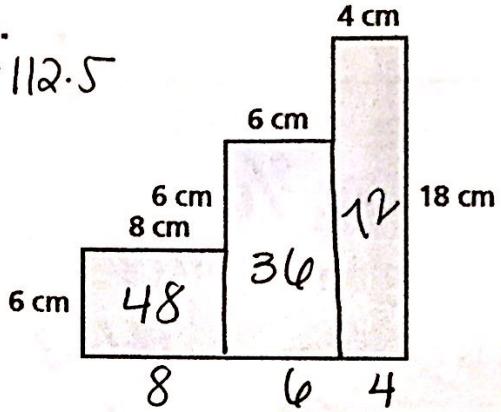
$\frac{15(15)}{2} = 112.5$

$(7.5)^2\pi = 176.7$

$112.5 + 176.7$

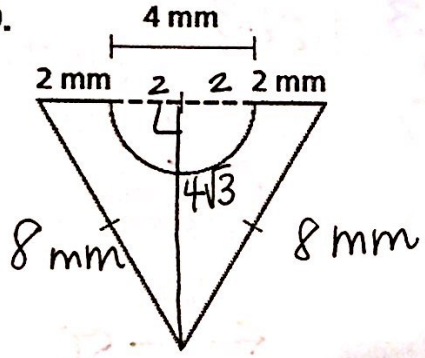
$289.2\ ft^2$

19.



$156\ cm^2$

20.



Area of Δ = $\frac{(4\sqrt{3})(8)}{2} = 27.7$

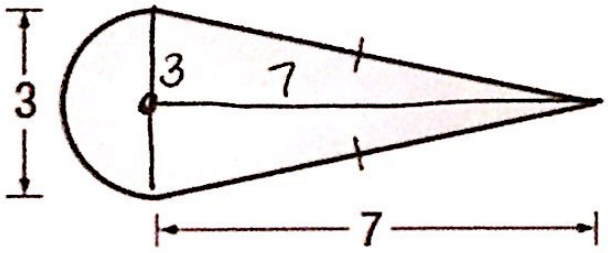
Area of ⊙ = 4π

$27.7 - 4\pi = 15.1\ mm^2$

★

Find the area of the shaded region.

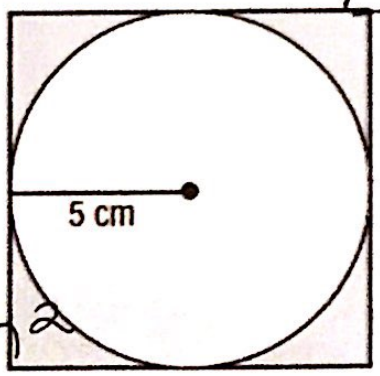
$(1.5)^2\pi + \frac{3(7)}{2} = 17.5$



✿

Find the area of the shaded region.

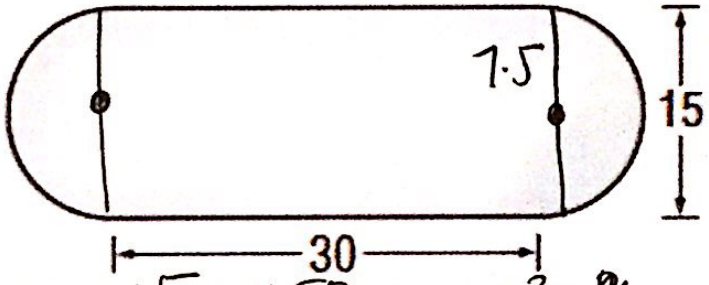
$100 - 25\pi = 21.46$



39.03 cm²

✖

Find the area of the shaded region.



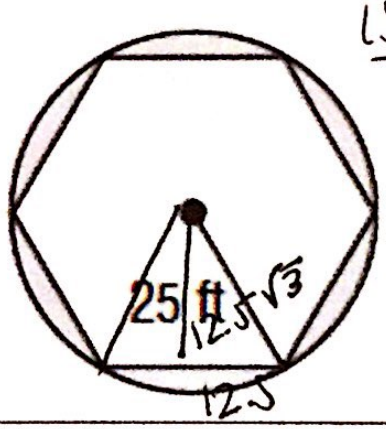
$30 \times 15 = 450 + 7.5^2\pi$

626.7

◆

Find the area of the shaded region.

$\frac{150(12.5}{2}$

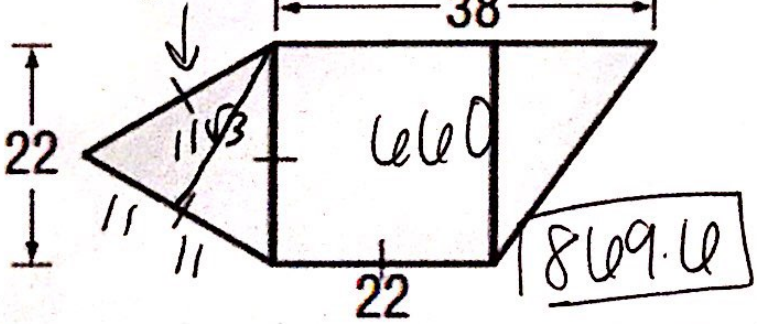


=1623.8

❤

Find the area of the shaded region.

209.6



869.6

Find the area of the shaded region.

400