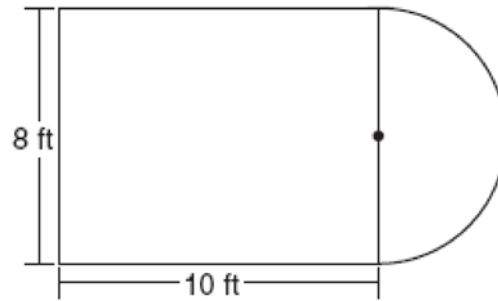




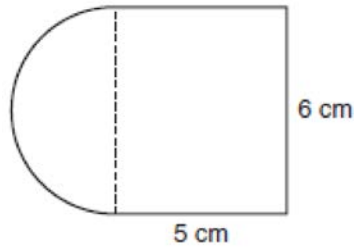
- 3 Luis is going to paint a basketball court on his driveway, as shown in the diagram below. This basketball court consists of a rectangle and a semicircle.



Which expression represents the area of this basketball court, in square feet?

- |                |                 |
|----------------|-----------------|
| 1) 80          | 3) $80 + 16\pi$ |
| 2) $80 + 8\pi$ | 4) $80 + 64\pi$ |

- 4 A figure is made up of a rectangle and a semicircle as shown in the diagram below.

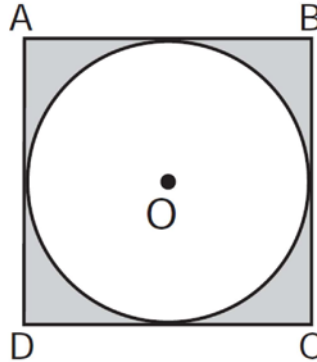


What is the area of the figure, to the *nearest tenth of a square centimeter*?

- |         |         |
|---------|---------|
| 1) 39.4 | 3) 48.8 |
| 2) 44.1 | 4) 58.3 |



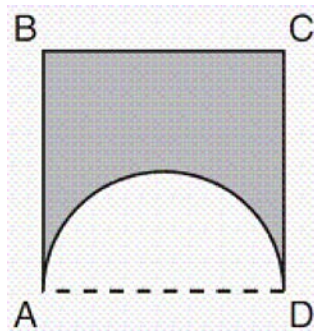
7 In the diagram below, circle  $O$  is inscribed in square  $ABCD$ . The square has an area of 36.



What is the area of the circle?

- 1)  $9\pi$
- 2)  $6\pi$
- 3)  $3\pi$
- 4)  $36\pi$

8 A figure consists of a square and a semicircle, as shown in the diagram below.

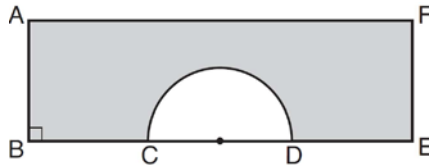


If the length of a side of the square is 6, what is the area of the shaded region?

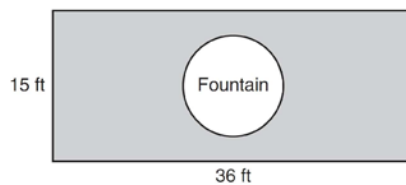
- 1)  $36 - 3\pi$
- 2)  $36 - 4.5\pi$
- 3)  $36 - 6\pi$
- 4)  $36 - 9\pi$



- 12 In the diagram below of rectangle  $AFEB$  and a semicircle with diameter  $\overline{CD}$ ,  $AB = 5$  inches,  $AB = BC = DE = FE$ , and  $CD = 6$  inches. Find the area of the shaded region, to the *nearest hundredth of a square inch*.

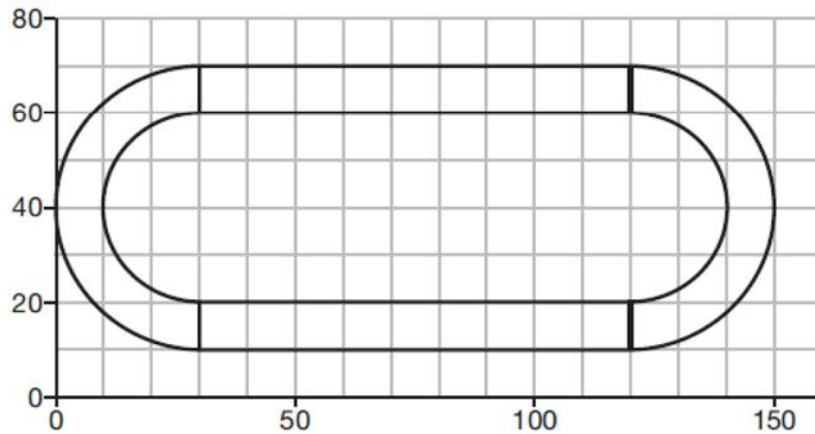


- 13 The Rock Solid Concrete Company has been asked to pave a rectangular area surrounding a circular fountain with a diameter of 8 feet, as shown in the diagram.



Find the area, to the *nearest square foot*, that must be paved. Find the cost, *in dollars*, of paving the area if the Rock Solid Concrete Company charges \$8.95 per square foot.

- 14 A walking path at a local park is modeled on the grid below, where the length of each grid square is 10 feet. The town needs to submit paperwork to pave the walking path. Determine and state, to the *nearest square foot*, the area of the walking path.



- 15 A man is spray-painting the tops of 10 patio tables. Five tables have round tops, with diameters of 4 feet, and five tables have rectangular tops, with dimensions of 4 feet by 6 feet. A can of spray paint covers 25 square feet. How many cans of spray paint must be purchased to paint all of the tabletops?

### G.MG.A.3: Compositions of Polygons and Circles 2

#### Answer Section

1 ANS: 1 REF: 011918geo

2 ANS: 2

shaded = whole – unshaded

= rectangle-triangle

$$= lw - \frac{1}{2}bh$$

$$= 15 \times 6 - \frac{1}{2} \times 15 \times 4.6$$

$$= 90 - 34.5$$

$$= 55.5$$

REF: 081019ia

3 ANS: 2 REF: 080815ia

4 ANS: 2

$$A = lw + \frac{\pi r^2}{2} = 6 \cdot 5 + \frac{\pi \cdot 3^2}{2} \approx 44.1$$

REF: 061029ia

5 ANS: 3 REF: 011315ia

6 ANS: 2

$$A = lw + lw + \frac{\pi r^2}{4} = 5 \cdot 3 + 5 \cdot 3 + \frac{\pi \cdot 3^2}{4} \approx 37$$

REF: 011123ia

7 ANS: 1

If the area of the square is 36, a side is 6, the diameter of the circle is 6, and its radius is 3.  $A = \pi r^2 = 3^2 \pi = 9\pi$

REF: 011217ia

8 ANS: 2

$$6^2 - \frac{(3)^2 \pi}{2}$$

REF: 011407ia

9 ANS: 4

$$(8 \times 2) + (3 \times 2) - \left( \frac{18}{12} \times \frac{21}{12} \right) \approx 19$$

REF: 081917geo

10 ANS:

$$(2x)^2 + \pi x^2 = 4x^2 + \pi x^2$$

REF: 061431ia

11 ANS:

Area of square–area of 4 quarter circles.  $(3 + 3)^2 - 3^2 \pi = 36 - 9\pi$

REF: 060832ia

12 ANS:

Area of rectangle minus area of semicircle:  $(5 + 6 + 5) \times 5 - \frac{\pi \times 3^2}{2} \approx 65.86$

REF: 061339ia

13 ANS:

$$(15 \times 36) - (\pi \cdot 4^2) \approx 490 \quad 490 \times 8.95 = 4385.50$$

REF: 011537ia

14 ANS:

$$2 \times (90 \times 10) + (\pi)(30^2) - (\pi)(20^2) \approx 3371$$

REF: 011931geo

15 ANS:

$$\frac{5\pi(2)^2 + 5(6)(4)}{25} \approx 7.3 \quad 8 \text{ cans}$$

REF: 082328geo