In The Paint

Composite Figures

THINKING ABOUT MATH

# Part One

THINKING
ABOUT MATH

In The Paint

The University of Wissamissin Lady Dragons is the defending women's college basketball national champions. The Lady Dragons have won three out of the last four national championships. The university wants to honor the Lady Dragons by redesigning the main court at the Wissamissin Field House.

The University of Wissamissin has hired you to assist with the design process. You are responsible for painting the basketball keys on both ends of the basketball court. The perimeter of the key must be outlined in white. The circle of the key must be red, and the remaining area of the key will be black.

Utilize the diagram below to answer the Mind Check 1 questions.

6 feet

15 feet

DRAGONS
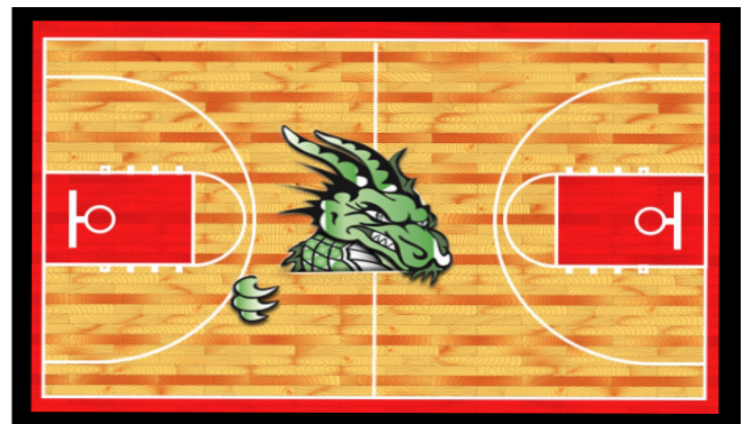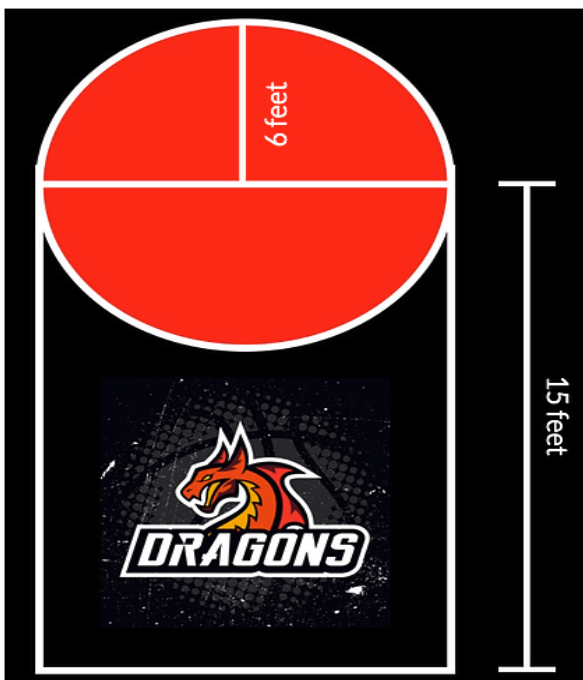
1.

Which of the following represents the diameter of the circle featured in the composite figure?

a. 36 feet
b. 18.84 feet
c. 12 feet
d. 15 feet

2.

The circumference is the distance around the circle. Which of the following is the formula to calculate the circumference of a circle?

a. $C = \pi \times r^2$
b. $C = \pi \times D$
c. $C = \pi \times D^2$
d. $C = \pi \div D$

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3.

The area painted red is a circle. Select one of the following that represents the circumference of the red circle.

a. 18.84 feet
b. 12 feet
c. 37.68 feet
d. 113.04 feet

4.

The section of the key painted black is an irregular figure. Which of the following would represent the area of the black painted section of the key?

a. 66.96 square feet
b. 123.48 square feet
c. 236.52 square feet
d. 293.04 square feet

5.

Utilizing all the information presented in the diagram, calculate the perimeter of the entire key. Select the correct perimeter of the key.

a. 54 feet

b. 78.42 feet

c. 82.14 feet

d. 60.84 feet

6.

The area is the space inside a two-dimensional figure. Which of the following is the formula to calculate the area of a circle?

a. $A = \pi d$

b. $A = \frac{1}{2}\pi$

c. $A = \pi r^2$

d. $A = \frac{\pi}{2} r^2$

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7.

The area painted red is a circle. Select one of the following that represents the area of the red circle.

a. $A = \pi \times 12$

b. $A = \pi \times 6^2$

c. $A = \pi \times 12^2$

d. $A = \frac{\pi}{36}$

8.

The black painted area in the key is an irregular figure. Which of the following would represent the area of the black painted area of the key?

a. $A = \pi \times r^2 + L \times W$

b. $A = (L \times W) - \frac{\pi \times r^2}{2}$

c. $A = (L \times W) + 12\pi$

d. $A = (\pi \times D) + \frac{L \times W}{2}$

9.

Utilizing all the information presented in the diagram, calculate the area of the entire key. Select the correct area of the key.

a. 236.52 square feet

b. 293.04 square feet

c. 192 square feet

d. 217.68 square feet

10.

Which of the following formulas would use to determine the length of the free-throw line (diameter)?

a. $D = \pi \times C$

b. $D = 2 \times \frac{C}{\pi}$

c. $D = \frac{C}{\pi}$

d. $D = \frac{\pi \times C}{2}$

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