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Question 1. A.

Use the formula $C = \pi \times d$,where d is the diameter.

$d = 14$

and $\pi = \frac{22}{7}$ as an approximation

So $C = \frac{22}{7} \times 14 = \frac{22 \times 14}{7} = 22 \times 2 = 44$

Circumference $= 44$ inches

Question 2. B.

Use the formula $C = \pi \times d$,where d is the diameter.

$d = 21 \times 2 = 42$ and $\pi = \frac{22}{7}$

Therefore $C = \frac{22}{7} \times 42 = 132$

Circumference $= 132$ cm

Question 3. B.

Use the formula $A = \pi \times r^2$,where r is the radius.

$d = 14 \Rightarrow r = 7$ and $\pi = \frac{22}{7}$

Therefore $A = \frac{22}{7} \times 7^2 = \frac{22}{7} \times 49 = 154$

Area $= 154$ inches^2

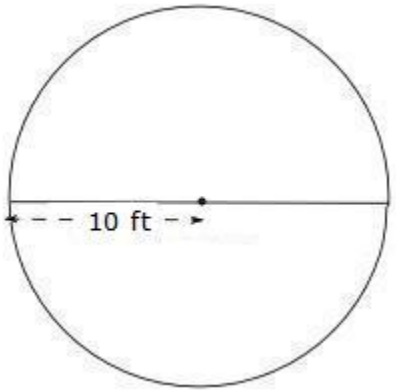
Question 4. C.

Use the formula $A = \pi \times r^2$,where r is the radius.

$r = 21$ and $\pi = \frac{22}{7}$

Therefore $A = \frac{22}{7} \times 21^2 = \frac{22}{7} \times 441 = 1,386$

Question 5. C.



Use the formula: C = π × d , where d is the diameter.

r=10 so d=20
π=3.14 (approximately)

So C = 3.14 × 20 = 62.8

Circumference of the pond = 62.8 feet

Question 6. D.

Diameter = 1.4 m
So Radius = ½ × 1.4 m = 0.7 m
Use the formula A = π × r^2 , where r is the radius.
r = 0.7
π = (22/7) approximately
So A = (22/7) × 0.7^2 = (22/7) × 0.49 = 1.54
Area = 1.54 m^2

Question 7. B.

Use the formula for circumference: C = π × diameter
We know the radius = 21 m, so diameter d = 2 × 21 = 42 m
⇒ C = π × d
⇒ C = (22/7) × 42
⇒ C = 132
Circumference of the garden = 132 m

Question 8. A

The area of a circle is $A = \pi \times r^2$
The area of a semicircle is half of that: $A = ½ \times \pi \times r^2$
We know the diameter = 7 ft, so the Radius = ½ × 7 ft = 3.5 ft
$\Rightarrow A = ½ \times \pi \times r^2$
$\Rightarrow A = ½ \times (22/7) \times 3.5^2$
$\Rightarrow A = ½ \times (22/7) \times 12.25$
$\Rightarrow A = (11/7) \times 12.25$
$\Rightarrow A = 19.25$
Area of carpet = 19.25 ft^2

Question 9. B

The trick is to subtract the area of the inner circle from the area of the outer circle.
Use the formula for the area of a circle: $A = \pi \times r^2$, where r is the radius.
For the outer circle, r = 3, so $A = \pi \times 3^2 = \pi \times 9 = 9\pi$
For the inner circle, r = 2, so $A = \pi \times 2^2 = \pi \times 4 = 4\pi$
So the area of the ring = $9\pi - 4\pi = 5\pi$

Question 10. D

Use the formula for the area of a circle $A = \pi \times r^2$, where r is the radius.

For the top circle, $r = 3$ so: $A = \pi \times 3^2 = \pi \times 9 = 9\pi$

For the bottom circle, $r = 5$ so: $A = \pi \times 5^2 = \pi \times 25 = 25\pi$

So the area of the logo $= 9\pi + 25\pi = 34\pi$