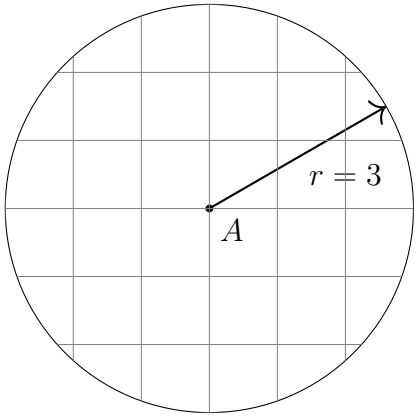
1.9 Rounding and circle area

1. Write in your notebook the formulas for the area and circumference of circles and these definitions:
   - The radius, r, is the distance from the center to the edge of a circle.
   - The diameter, D, is the distance all of the way across a circle, two times the radius. $D = 2r$.
   - The circumference, C, is the distance around the circle (its perimeter).

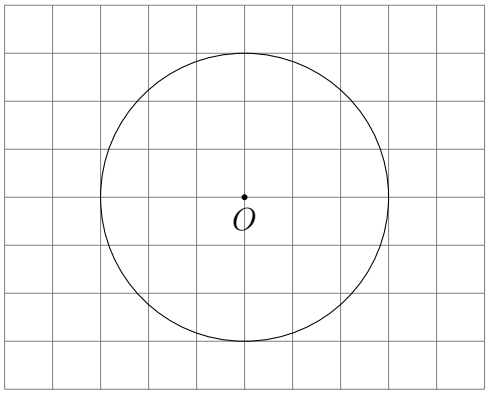
$$A = \pi r^2$$

$$C = \pi D = 2\pi r$$

2. Given the circle A with radius $r = 3$. Leave exact answers, in terms of π.
   (a) Find the circumference of circle A.
   (b) Find the area of the circle.

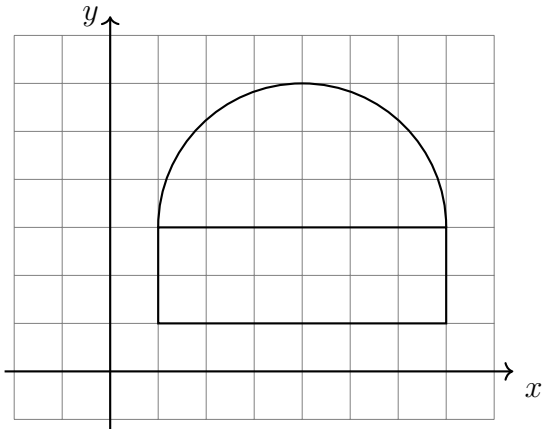


3. Given the circle centered at O with radius $r = 3$. Leave an exact answer, in terms of π if necessary.
   (a) Find the circumference of circle O.
   (b) Find the area of the circle.



4. Find the area A and circumference C of a circle with radius 4 meters (in terms of π).
5. Find the area A and circumference C of a circle with radius 5 feet (in terms of π).

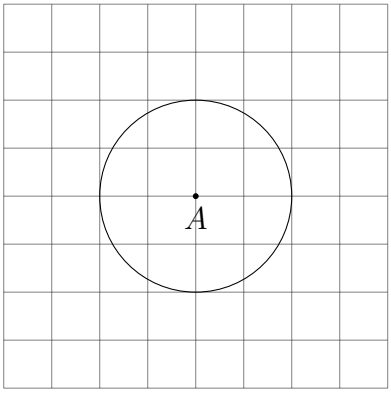
6. Find the area of the shape shown below composed of a rectangle and circular cap. Leave your answer as an exact value in terms of π.



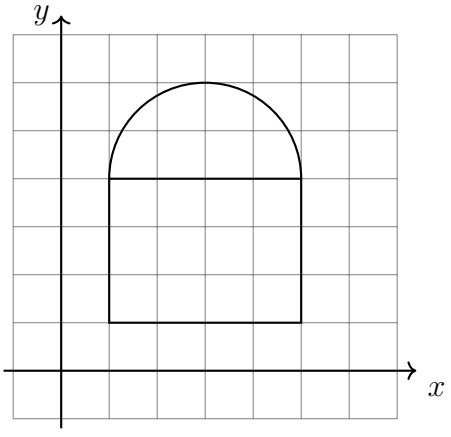
7. Given the circle centered at A with radius $r = 2$. Leave an exact answer, in terms of π if necessary.

   (a) Find the circumference of circle A.

   (b) Find the area of the circle.



8. Find the area of the shape shown below composed of a rectangle and circular cap. Leave your answer as an exact value in terms of π.



9. Mark each statement true of false.

(a) T F 3.14 is the exact value of π

(b) T F 4π is the area of a circle with radius 2 in terms of π

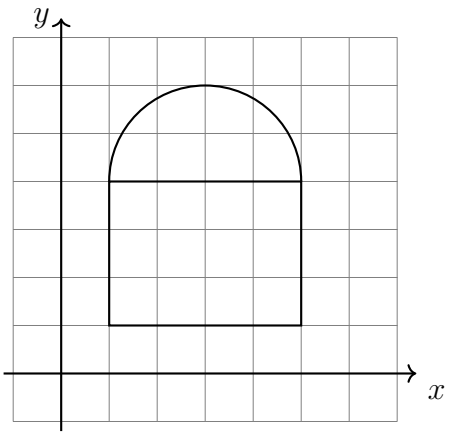
(c) T F $C = 10\pi \approx 31.4$ is an approximation

(d) T F $3\sqrt{2}$ is an exact value

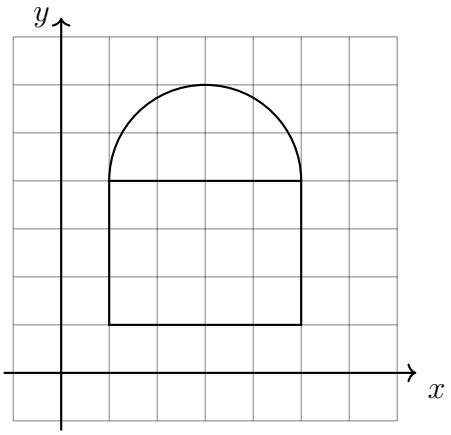
(e) T F $0.707\ldots$ is an approximation for $\dfrac{1}{\sqrt{2}}$

10. Find the area A and circumference C of a circle with radius 5 feet (in terms of π).

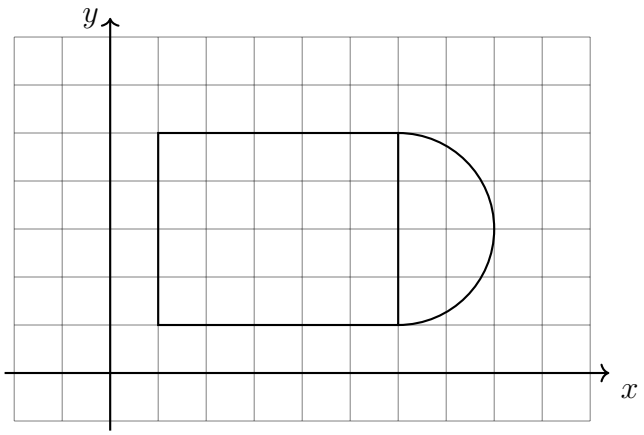
11. Find the area of the shape shown below composed of a rectangle and circular cap. Leave your answer as an exact value in terms of π.



12. Find the *perimeter* of the shape shown below composed of a rectangle and circular cap. Leave your answer as an exact value in terms of π.



13. Find the area of the shape shown below composed of a rectangle and a semi-circle.



14. Find the area of the shape shown below composed of a rectangle and a semi-circle.