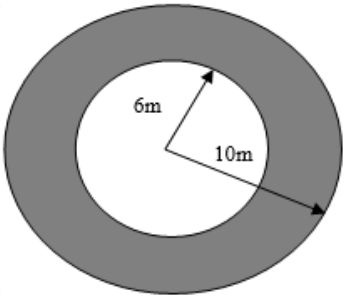
Warm-up

1. Find the area of the shaded region.



2. Find the measure of the central angle of a sector if the area of the sector is 5π and the radius is 6.

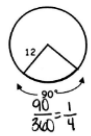
$$\frac{5\pi}{\pi} = \frac{x}{360} \cdot \frac{\pi(6)^2}{\pi}$$

$$\frac{5}{36} = \frac{x}{360} \cdot \frac{36}{36}$$

$$\frac{5}{36} = \frac{x}{360}$$

Find the area of the sectors:

1. Express answer exactly.



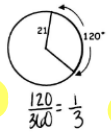
$\text{Area} = \frac{90}{360} \cdot \pi(12)^2$

$= \frac{1}{4} \cdot 144\pi$

$= 36\pi \text{ units}^2$

$\frac{90}{360} = \frac{1}{4}$

2. Express answer approximately.



$\text{Area} = \frac{120}{360} \cdot \pi(21)^2$

$= \frac{1}{3} \cdot 441\pi$

$= 147\pi \text{ units}^2$

$= 461.58 \text{ units}^2$

$\frac{120}{360} = \frac{1}{3}$

3. A circle has a radius of 12. Find the area of the sector whose central angle is 120°.

$\frac{120}{360} = \frac{1}{3}$ $\text{Area} = \frac{120}{360} \cdot \pi(12)^2$

$= \frac{1}{3} \cdot 144\pi$

$= 48\pi \text{ units}^2$

Find the radius of each circle. Round answers to the nearest whole number.

4.

$\frac{144}{360} = \frac{2}{5}$

Area of Shaded Region = 40π

radius = _____

$\text{Area of Sector} = \frac{\theta}{360} \cdot \pi r^2$

$5 \cdot 40\pi = \frac{2}{5}\pi r^2 \cdot 5$

$\frac{200\pi}{2\pi} = \frac{2\pi r^2}{2\pi}$ $r^2 = 100$

$r = 10 \text{ units}$

5.

$\frac{30}{360} = \frac{1}{12}$

Area of Shaded Region = 84.8

radius = _____

$\text{Area of Sector} = \frac{\theta}{360} \cdot \pi r^2$

$12 \cdot 84.8 = \frac{1}{12} \cdot 3.14r^2 \cdot 12$

$\frac{1017.6}{3.14} = \frac{3.14r^2}{3.14}$

$324.01 = r^2$

$r = 18 \text{ units}$

6. The central angle of a sector is 72° and the sector has an area of 5π. Find the radius.

$\frac{72}{360} = \frac{1}{5}$ $\text{Area of Sector} = \frac{\theta}{360}\pi r^2$

$5 \cdot 5\pi = \frac{1}{5}\pi r^2 \cdot 5$

$\frac{25\pi}{\pi} = \frac{\pi r^2}{\pi}$

$25 = r^2$

$5 = r$

7. Find the measure of the central angle of a sector if its area is 5π and the radius is 6.

$5\pi = \frac{\pi(6)^2 X}{360}$

$1800\pi = 36\pi X$

$50\pi = \pi X$

$50 = X$

$X = 50°$

8. The diameter of a pizza is 25 centimeters. Each slice of pizza has a central angle of 36 degrees. If you eat 3 slices how many square centimeters of pizza have you eaten?

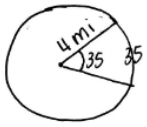
$r = 12.5$

central $\angle = 108$

$\text{area of sector} = \frac{3.14(12.5)^2 108}{360} = \frac{52987.5}{360} = 147.19$

147.19 cm^2

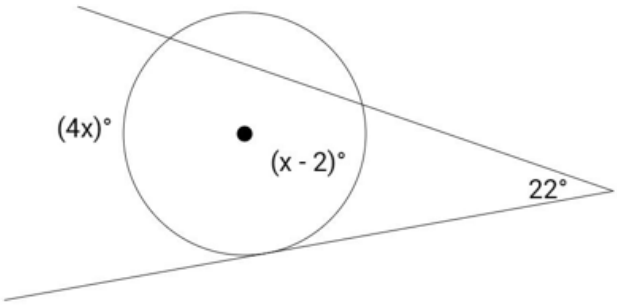
9. A lighthouse projects a beam of light that can be seen from up to 4 miles away and covers an angle of 35°. What is the area of the region which a ship can see the light from the lighthouse?



$\text{area of sector} = \frac{3.14(4)^2(35)}{360} = \frac{1758.4}{360} = 4.88$

4.88 miles^2

3.



What is the value of x?

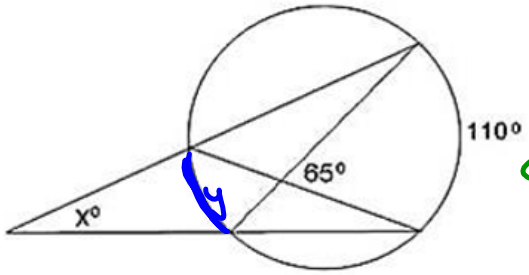
A. 14°
B. 15.7°
C. 16.7°
D. 22°

$$\frac{(4x)-(x-2)}{2}=22$$

$$2\cdot\frac{4x-x+2}{2}=22\cdot 2$$

$$3x+2=44$$
$$-2\quad -2$$
$$\frac{3x}{3}=\frac{42}{3}$$
$$x=14$$

4.



Use the figure to answer the question.
What is the value of x?

A. 20°
B. 45°
C. 55°
D. 90°

$\frac{y+110}{2} = 65$

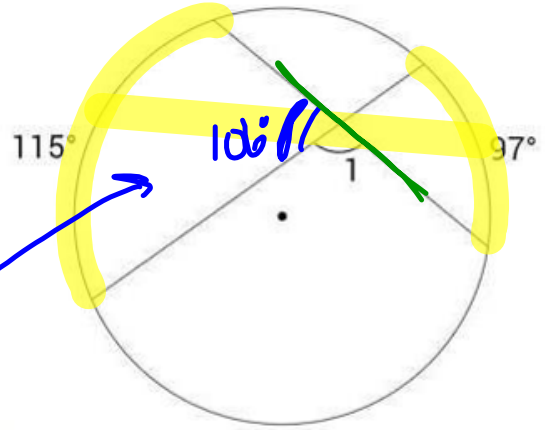
$y + 110 = 130$

$y = 20$

$\frac{110-20}{2} = x$

$\frac{90}{2} = x$

5.



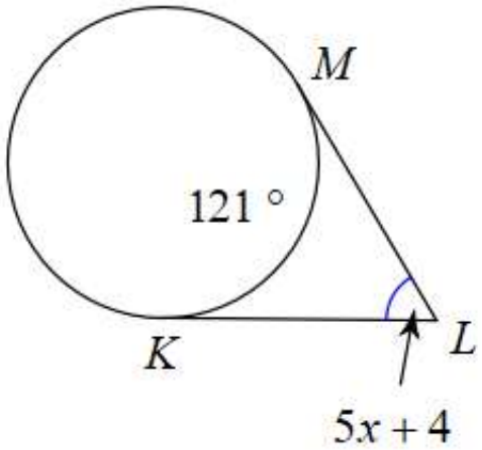
Use the figure to answer the question.
What is $m\angle 1$?

A. 74°
B. 18°
C. 106°
D. 164°

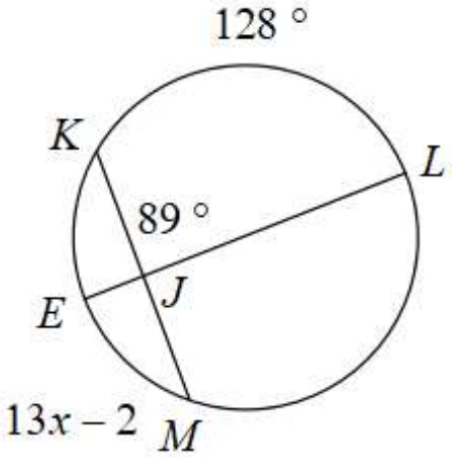
115+97
2

180
-106
74°

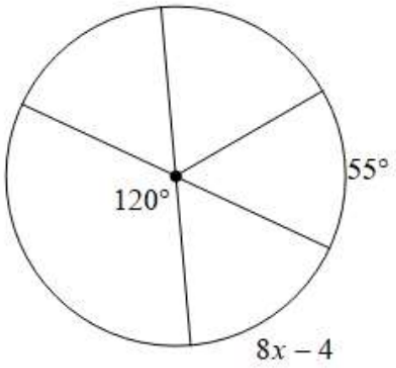
1. Solve for x.



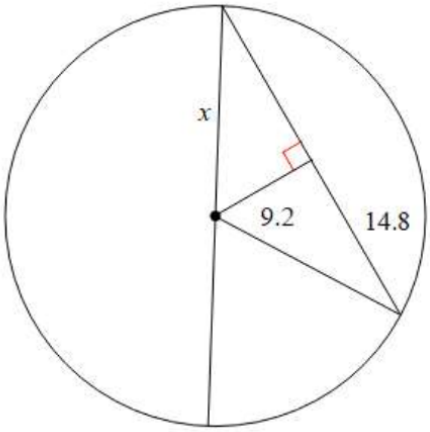
2. Solve for x.



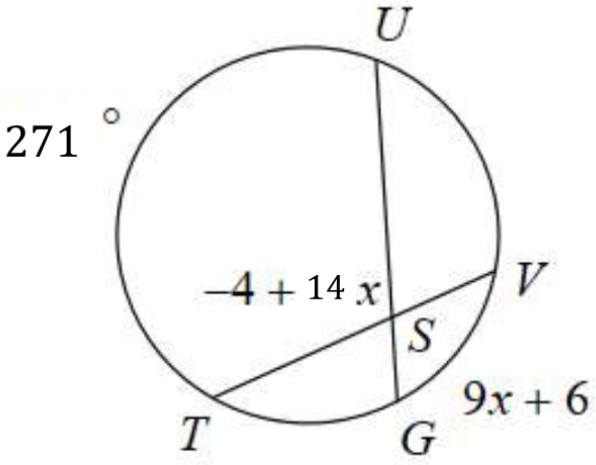
3. Solve for x.



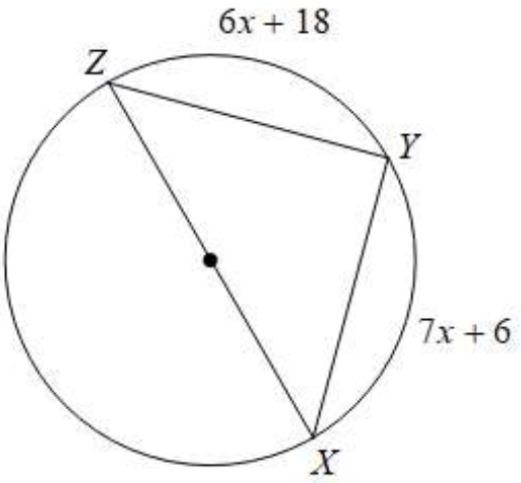
4. Solve for x. Round your answer to the nearest whole value.



5. Solve for x.

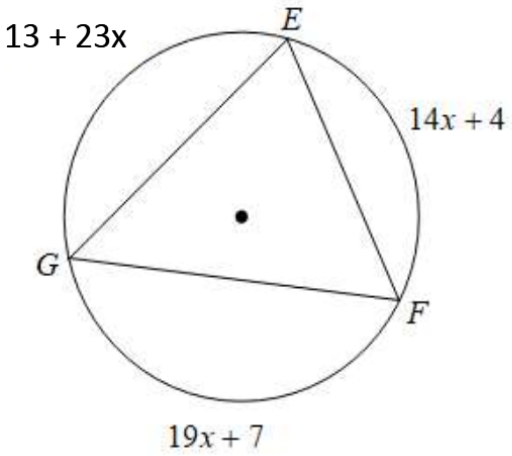


6. Solve for x.

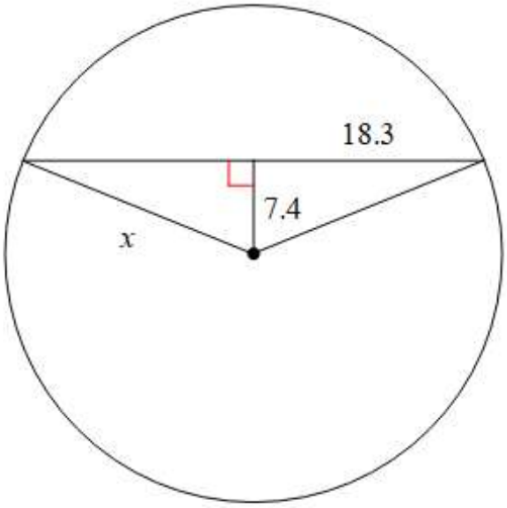


7. Given the area of a circle is 14 in^2, find the radius. Round to the nearest whole value.

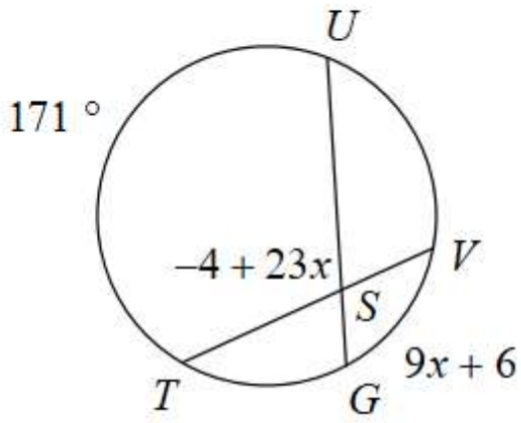
8. Find the value of x.



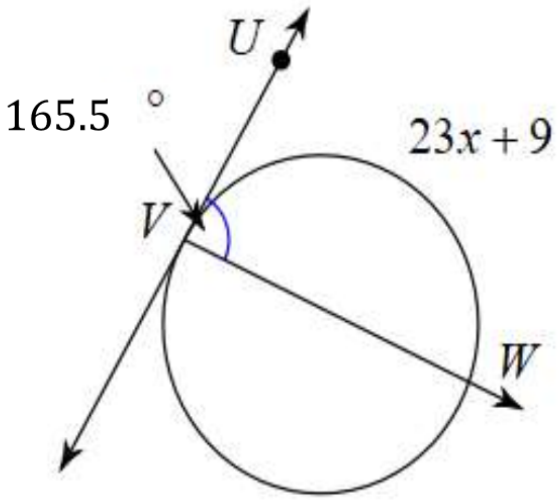
9. Solve for x. Round your answer to the nearest whole value.



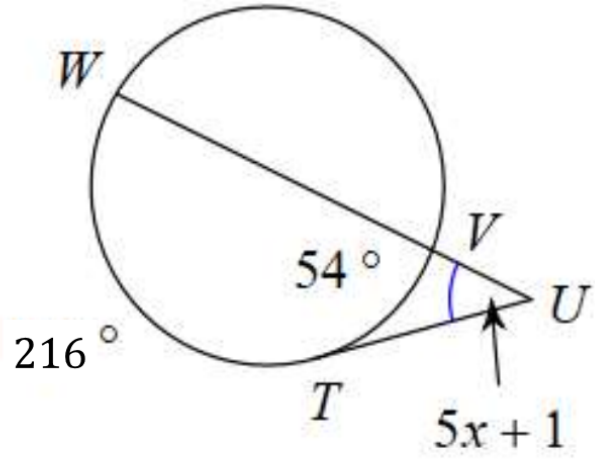
10. Solve for x.



11. Solve for x.

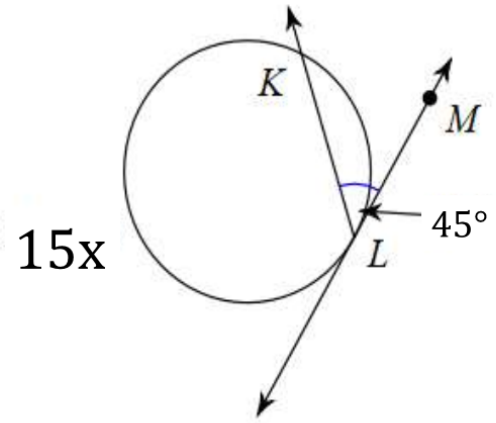


12. Solve for x.

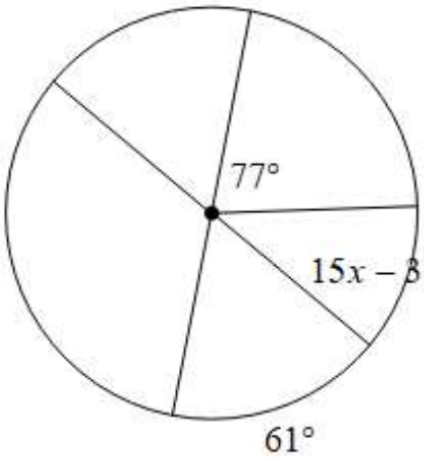


13. Given the area of a circle is 314 in^2, what is the radius of the circle? Round your answer to the nearest whole value.

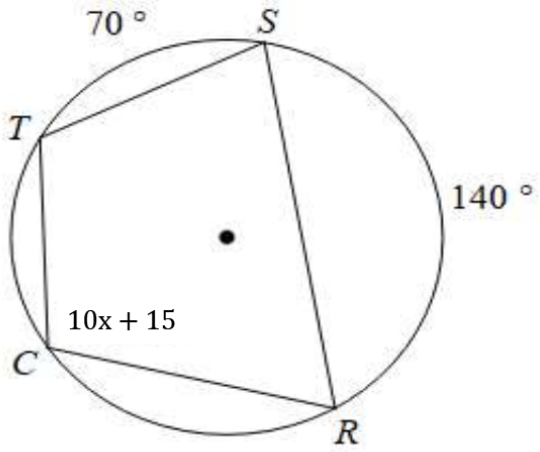
14. Solve for x.



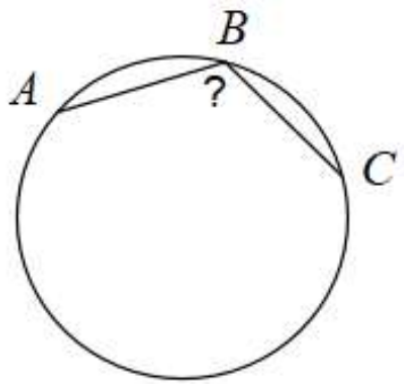
15. Solve for x.



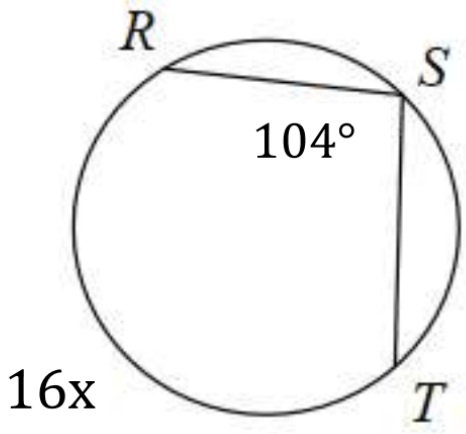
16. Solve for x.



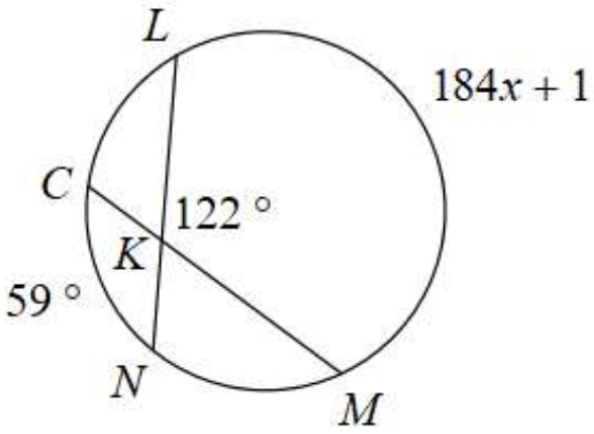
17. Solve for m<ABC.



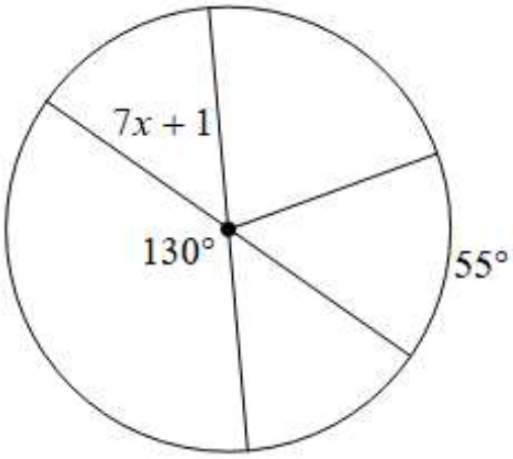
18. Solve for x.



19. Solve for x.



20. Solve for x.



Answer Key

- 3 → 8 → 6 → 12 → 16 → 9 → 20 → 7 → 2 → 4 → 17 → 19 → 1 → 11 → 14 → 18 → 13 → 10 → 5 → 15 → 3