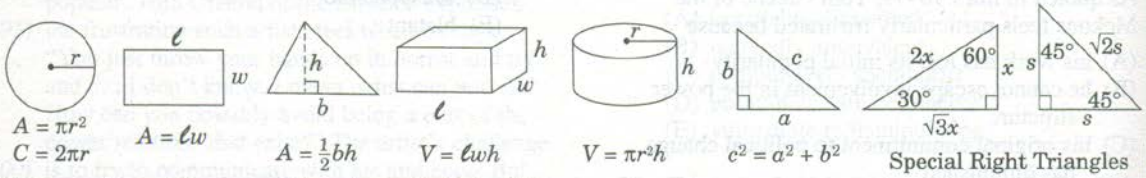
Name _____ Date _____ Period _____

Reference Information



$A = \pi r^2$ $C = 2\pi r$ $A = \ell w$ $A = \frac{1}{2}bh$ $V = \ell wh$ $V = \pi r^2 h$ $c^2 = a^2 + b^2$ Special Right Triangles

The number of degrees of arc in a circle is 360.
The measure in degrees of a straight angle is 180.
The sum of the measures in degrees of the angles of a triangle is 180.

DIRECTIONS: For #1-6, leave answers in exact terms (using π and/or radicals, if necessary). For #7-10, use approximations for π as directed and show work. Remember to label your answers with correct units of measure when necessary!

1. The radius of a circle is 10. What is the circumference of the circle? _____

2. The radius of a circle is 14. What is the area of the circle? _____

3. The circumference of a circle is 22π. What is the radius of the circle? _____

4. The circumference of a circle is 10π. What is the area of the circle? _____

5. The area of a circle is 49π. What is the radius of the circle? _____

6. The area of a circle is 24π. What is the circumference of the circle? _____

7. The diameter of a Blu-ray disc is 12 cm. What is the interior area of a Blu-ray disc? (use $\pi \approx 3.14$ and round to two decimal places)?

_____

8. William is reading an advertisement for a 180-square inch circular rug. What is the diameter of the rug (use $\pi \approx 3.14$ and round to two decimal places)?

_____

9. Which is a better buy – an 8-inch pizza for $10 or a 14-inch pizza for $16?

A. Explain (in words) how you will determine/prove the correct answer:

_____

_____

_____

_____

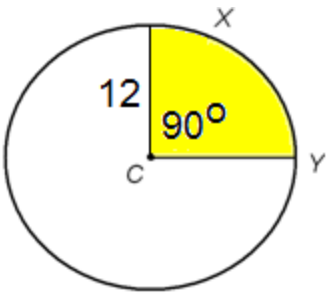
B. Show work (use $\pi \approx 3.14$, if necessary):

C. Circle <u>exactly one</u> correct answer: 8-inch pizza for $10 **OR** 14-inch pizza for $16

10. A Ferris wheel has a diameter of 70 ft. How far will a rider travel during a four-minute ride if the wheel rotates once every twenty seconds (use $\pi \approx 22/7$)?

_____

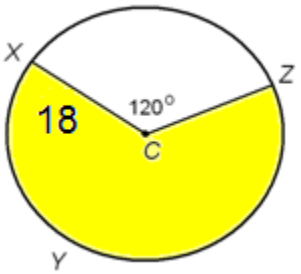
DIRECTIONS: Use the following diagram of circle *C* for #11-12. Leave answers in exact terms (using π and/or radicals, if necessary). Show work.



11. What is the area of the shaded region of the diagram? _____

12. What is the length of $\overset{\frown}{XY}$? _____

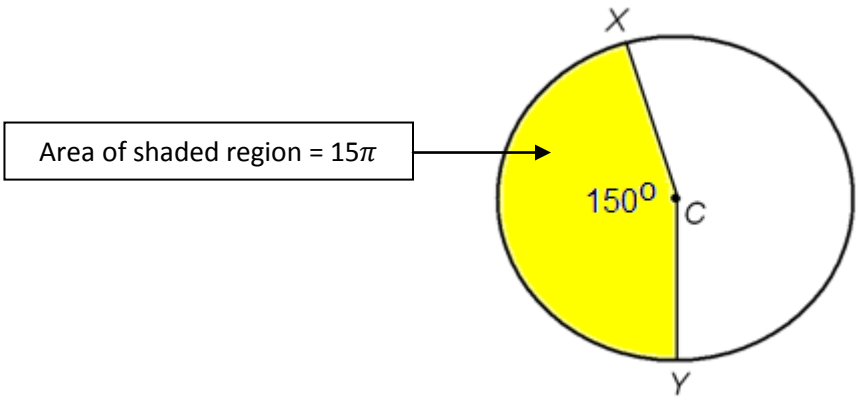
DIRECTIONS: Use the following diagram of circle *C* for #13-14. Leave answers in exact terms (using π and/or radicals, if necessary). Show work



13. What is the area of the shaded region of the diagram? _____

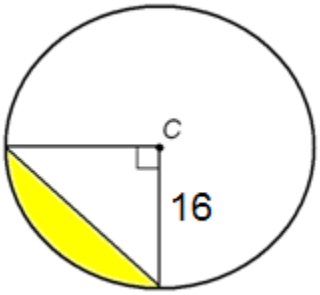
14. What is the length of $\overset{\frown}{XYZ}$? _____

DIRECTIONS: Use the following diagram of circle C for #15. Leave answers in exact terms (use π and/or radicals, if necessary). Show work.



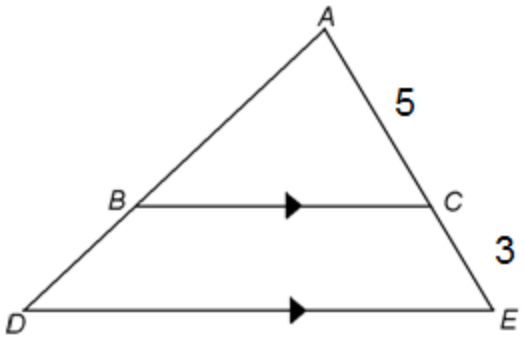
15. What is the radius of circle C? _____

DIRECTIONS: Use the following diagram of circle C for #16. Leave answers in exact terms (using π and/or radicals, if necessary). Show work.



16. What is the area of the shaded region of the diagram? _____

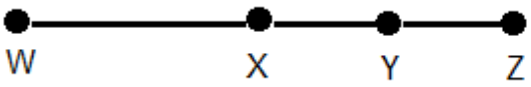
DIRECTIONS: Use the following diagram for #17-18. In the diagram, $\triangle ABC \sim \triangle ADE$.



17. What is the scale factor of $\triangle ABC$ to $\triangle ADE$? _____

18. What is the ratio of the areas of $\triangle ABC$ to $\triangle ADE$? _____

DIRECTIONS: Use the following diagram for #19-21. In the figure, $WX = XZ$ and $XY = YZ$. Write your probability answers as simplified fractions or exact decimals.



19. If point A is picked at random on $\overline{WZ}$, what is the probability that A is between W and Y? _____

20. If point A is picked at random on $\overline{WZ}$, what is the probability that A is between X and Z? _____

21. If point A is picked at random on $\overline{WZ}$, what is the probability that A is between X and Y? _____

DIRECTIONS: Use the following scenario for #22-24. Write your probability answers as simplified fractions or exact decimals.

During the afternoon rush period at the 108th Street train station, every 20 minutes an express train arrives and waits 5 minutes to pick up passengers. Six minutes after the express train leaves, a local train arrives and waits 2 minutes to pick up passengers.

22. If a passanger arrives at the 108th Street station at a random time during the afternon rush period, what is the probability that the express train will be waiting at the station?

_____

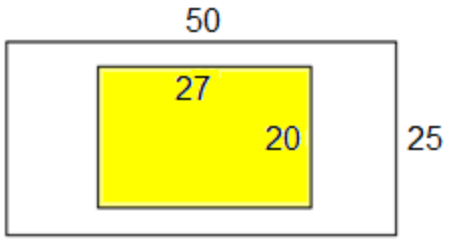
23. If a passanger arrives at the 108th Street station at a random time during the afternoon rush period, what is the probability that no train will be waiting at the station?

_____

24. If a passanger arrives at the 108th Street station at a random time during the afternoon rush period and sees a train waiting for passengers, what is the probability that the train is a local train?

_____

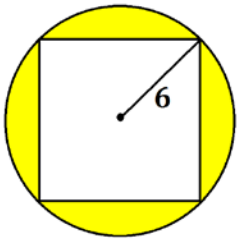
DIRECTIONS: Use the following diagram (the shapes are rectangles) for #25. Write your probability answer as a decimal rounded to two places.



25. What is the probability that a dart that randomly hits this diagram will hit within the shaded area?

_____

DIRECTIONS: Use the following diagram for #26. Use $\pi \approx 3.14$. Write your probability answer as a decimal rounded to two places.



26. What is the probability that a dart that randomly hits this diagram will hit within the shaded area?

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