

Math-2
Unit 8 Test Checklist

1. Know the relationship between the measures of
 - a. central angle and an inscribed angle that intercepts the same arc.
 - b. central angle and the intercepted arc.
 - c. opposite angles of an inscribed quadrilateral.
2. Know the measure of an inscribed angle that intercepts a diameter.
3. Be able to solve angle/arc problems that have:
 - a. Inscribed triangle
 - b. Inscribed quadrilateral
 - c. Diameters
4. Know the relationship between the measures of
 - a. Angle formed by secant and tangent lines to a circle and the intercepted arcs
 - b. Angle formed by two secant lines to a circle and the intercepted arcs
 - c. Angle formed by two tangent lines to a circle and the intercepted arcs
 - d. The two arcs formed by two tangent lines to a circle
 - e. The angle formed by a tangent line that intercepts a radius of the circle
 - f. The segments outside of a circle between the points of tangency and the point of intersection of the two tangent lines.
 - g. The lengths of segments formed when two chords of a circle intersect
 - h. The angle formed when two non-diameter chords intersect and the measures of the intercepted arcs.
5. Know how to identify the center and radius of a circle given an equation in “center-circle” form.
6. Know how to right an equation of a circle given its center and radius.
7. Know how to “complete the square” in order to rewrite a “conic section” form equation of a circle as in “center circle” form so that you can then identify the circle’s center and radius.
8. Know how to determine of a point is on a circle given the equation of the circle.

9. Be able to use “soh-cah-toa” to calculate the “height” of a non-right triangle.

10. Be able to calculate the area of the following two-dimensional shapes without having a formula sheet:

a. Trapezoid

b. Right and non-right triangles

c. Circle

d. rectangle

11. Be able to find the surface area (and lateral area if application of the following shapes without having a formula sheet available:

a. Square or rectangular prism

b. Triangular or rectangular pyramid

c. Cylinder

d. Sphere

12. Be able to calculate the volume of the following shapes without the use of a formula sheet:

a. Prism

b. Pyramid

c. Cylinder

d. Sphere

13. Be able to convert angle measures between radians and degrees.

14. Know the angular measure of a circle in radians and degrees.

15. Know how to calculate the length of an intercepted arc of a circle if the angle is given in:

a. Degrees

b. Radians

16. Know how to calculate the area of a sector of a circle if the angle is given in:

a. Degrees

b. Radians

17. Be able to create a Venn diagram, a tree diagram, or a 2-way table given a list of two mutually exclusive items (Fords or Chevy's), each of which can be broken into two groups (blue and white).
18. Given a Venn Diagram, tree diagram, or a 2-way table, understand the symbols and how to calculate the following probabilities:
- $P(A)$
 - $P(A \cap B)$
 - $P(\bar{A} \cup \bar{B})$
 - $P(A / B)$
 - $P(\bar{A} \cap \bar{B})$
 - $P(A \cup \bar{B})$

19. Given probabilities in fraction form, be able to construct a 2-way table in order to determine other probabilities that a problem might ask.

Example: $P(A) = \frac{7}{23}$ $P(A / B) = \frac{4}{11}$ $P(A \cap B) = ?$

20. Given probabilities in decimal form, be able to construct a 2-way table in order to determine other probabilities that a problem might ask.

Example:

$P(A) = 0.40$ $P(B) = 0.5$ $P(\bar{B} / \bar{A}) = 0.25$ $P(B / A) = ?$

21. Be able to calculate the probability of sequential events (drawing a King followed by a Queen from a well-shuffled deck with either replacement or without replacement).

22. Be able to tell the difference between a permutation and combination and use them to calculate the number of possible arrangements

Example: select people from a group of 10 and determine:

- The number of different 3-member committees are possible
- The number of different top-3 finishers in a race
- The number of different 1st, 2nd, and 3rd place finishers in a race.

23. Be able to calculate the number of license plates are possible using the multiplication principle of counting.

Example: find the number license plates a possible that have 3 digits followed by 4 letters.