

TEAM MEMBER #1

Give exact answers (not decimal approximations) unless otherwise specified. Place your answer in the corresponding blank on the answer sheet. Units must be accurate for the answer to be correct.

1. Find the reference angle for a clockwise rotation of 440° .
2. The variable expressions represent the angle measures of a triangle. Find the measure of each angle in the order stated.
 $m\angle A = x^\circ$, $m\angle B = 3x^\circ$, $m\angle C = 4x^\circ$
3. The centroid of triangle ABC is located at $P(-1, 2)$. The coordinates of A and B are $A(0, 6)$ and $B(-2, 4)$. What are the coordinates of vertex C ?
4. Given the triangle with sides of lengths 4, 2, and 5; classify the triangle as *acute*, *right*, or *obtuse*.
5. Find the sum of the measures of the interior angles of a *nonagon*.
6. Find the surface area of a right square pyramid with base edge length 2 feet and height 5 feet. Round answer to the nearest tenth.

TEAM MEMBER #2

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7. Find the reference angle for a clockwise rotation of 2221° .
8. The variable expressions represent the angle measures of a triangle. Find the measure of each angle in the order stated.
 $m\angle A = 2x^\circ$, $m\angle B = 2x^\circ$, $m\angle C = (x - 15)^\circ$
9. The coordinates of triangle JKL are $J(-2, 2)$, $K(4, 8)$, and $L(10, -4)$. Find the coordinate of the centroid, M .
10. Given the triangle with sides of lengths 6, 8, and 9; classify the triangle as *acute*, *right*, or *obtuse*.
11. Find the sum of the measures of the interior angles of a 20-gon.
12. The surface area of a cone with height 15 centimeters is 500π square centimeters. Find the radius of **the** base of the cone. Round your answer to two decimal places.

TEAM MEMBER #3

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13. A sequence two consecutive clockwise rotations, first of 260° and second of 180° , about the same center is equivalent to a single clockwise rotation of this many degrees.
14. The variable expressions represent the angle measures of a triangle. Find the measure of each angle in the order stated.
 $m\angle A = (3x - 15)^\circ$, $m\angle B = (x + 5)^\circ$, $m\angle C = (x - 20)^\circ$
15. The coordinates of triangle FGH are $F(2, 5)$, $G(4, 9)$, and $H(6, 1)$. Find the coordinate of the centroid, P .
16. Given the triangle with sides of lengths 15, 20, and 15; classify the triangle as *acute*, *right*, or *obtuse*.
17. The sum of the measures of the interior angles of a convex polygon is 1980° ; how many sides does the polygon have?
18. A cone with diameter 16 centimeters has height 15 centimeters. Find the volume of the cone. Round your answer to two decimal places.

TEAM MEMBER #4

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19. Find the measure of the reflex angle equivalent to a rotation of -170° .
20. The variable expressions represent the angle measures of a triangle. Find the measure of each angle in the order stated.
 $m\angle A = (2\sqrt{2x})^\circ$, $m\angle B = (5\sqrt{2x})^\circ$, $m\angle C = (2\sqrt{2x})^\circ$
21. The coordinates of triangle ABC are $A(0, 4)$, $B(3, 10)$, and $C(6, -2)$. Find the coordinate of the centroid, P .
22. Given the triangle with sides of lengths 3, 3, and $(3\sqrt{2})$; classify the triangle as *acute*, *right*, or *obtuse*.
23. The sum of the measures of the interior angles of a convex polygon is 2340° ; how many sides does the polygon have?
24. The volume of a pyramid is 60 cubic inches and the height is 15 inches. Find the area of the base.