NAME_____DATE_____PER.____

FORMULAS IN THREE DIMENSIONS

Answer each problem as indicated.

1. Find the length of the diagonal of a 4 ft. by 8 ft. by 12 ft. rectangular prism. Round to the nearest tenth, if necessary.

2. Find the height of a rectangular prism with a 6 in. by 10 in. base and a 13 in. diagonal. Round to the nearest tenth, if necessary.

3. Find the distance between the given points and the midpoint of the segment with given endpoints. Round to the nearest tenth, if necessary.

$$A(0, 3, 8) \text{ and } B(7, 0, 14)$$

4. Find the distance between the given points and the midpoint of the segment with given endpoints. Round to the nearest tenth, if necessary.

$$A(4, 6, 10) \text{ and } B(9, 12, 15)$$

5. After a day hike, a group of hikers set up a camp 3 km east and 7 km north of the starting point. The elevation of the camp is 0.6 km higher than the starting point. What is the distance from the camp to the starting point? Round to the nearest tenth.

6. Find the length of a diagonal of a rectangular prism that has a length of 12 feet, a width of 3 feet and a height of 4 feet. If the length, width and height are doubled, what happens to the length of the diagonal?

7. A polyhedron has 8 vertices and 12 edges. How many faces does it have and what is the name of the polyhedron?

8. A polyhedron has 9 edges and 5 faces. How many vertices does it have and what is the name of the polyhedron?

9. A polyhedron has 7 vertices and 7 faces. How many edges does it have and what is the name of the polyhedron?

10. Find z if the midpoint between R(6, -1, -3) and S(3, 3, z) is (4.5, 1, 1.5).

Review

11. _____	Find the measure of each interior angle of a regular decagon.
12. _____	Find the measure of each exterior angle of the polygon in #11.
13. P = _____ A = _____	Find the perimeter and area of the polygon in #11 if the radius is 12 inches. Round to the nearest thousandth.
14. _____	In $\triangle$GHI, GH = 16, GI = 8, and HI = 12. List the angles in order from least to greatest.
15. _____	Determine if the following lines are parallel, perpendicular, or neither. $y = 4x - 5$ a line with an x-intercept of 4 and a y-intercept of 1

16. _____	Find the area of a parallelogram with bases that are 13 cm, adjacent sides are 8 cm, and one of the base angles is 45°.
17. _____	Find the area of a trapezoid that has bases that are 3 feet and 10 feet; one side is 8 feet and a base angle on that side is 60°.
18. _____	∠1 and ∠2 form a linear pair. m∠1 = (4x + 18)° and m∠2 = (3x – 6)°. What is m∠1?
19. _____	A coordinate grid is placed over a map. City A is located at (-1, 2) and city C is located at (3, 5). If city C is at the midpoint between city A and city B, what are the coordinates of city B? A. (1, 3.5) B. (-5, -1) C. (7, 8) D. (2, 7)
20. _____	For two parallel lines and a transversal, m<1 = 83°. For which pair of angle measures is the sum the least? A. ∠1 and a corresponding angle B. ∠1 and a same-side interior angle C. ∠1 and its supplement D. ∠1 and its complement