GEOMETRY

Exam 11

Based on Chapter 11 (pages 718 - 789) in your textbook.

Student's Name _____ **Student Number** _____

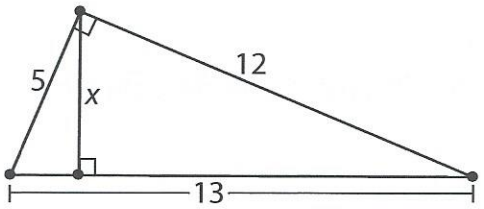
Street _____ **City** _____ **State** _____ **Zip Code** _____

BE SURE YOU FULLY UNDERSTAND ALL CHECKPOINT PROBLEMS FROM THIS CHAPTER **BEFORE** YOU COMPLETE THIS EXAM. **SHOW** AS MUCH **WORK** AS POSSIBLE.

1. Find the area of the triangle and solve for x.

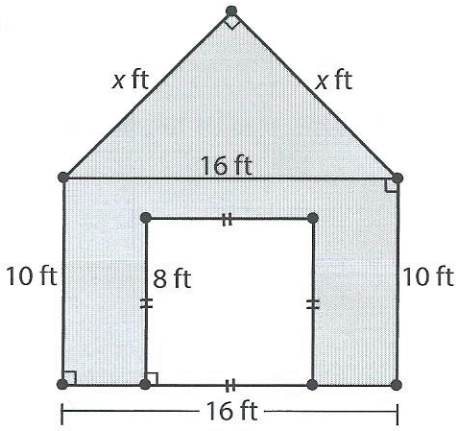
   Area = _____

   x = _____



2. The front of a metal shed needs to be spray painted. One can of spray paint will cover 20 ft^2. If the 8 ft × 8 ft square door is not painted, then how many cans of spray paint will you need to buy?

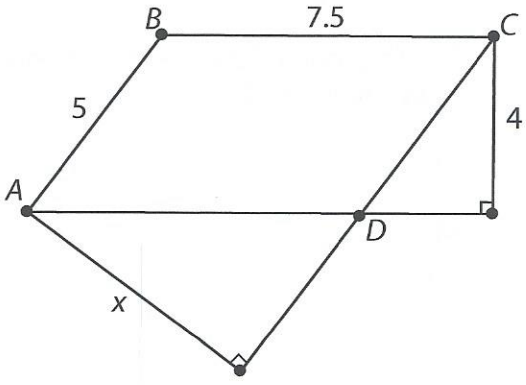
   _____



3. Find the area of $\square ABCD$ and solve for x.

   Area = _____

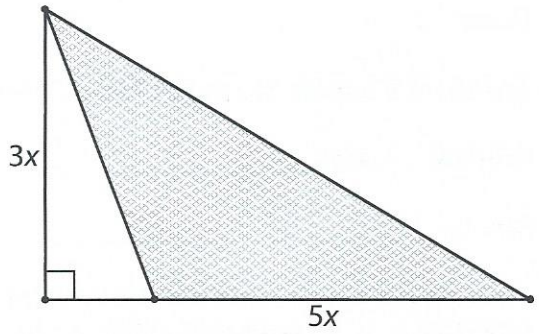
   x = _____



4. The ratio of the lengths of the base and corresponding height of a triangle is 5 : 3. If the area of the triangle is 270 mm^2, find the base and height.

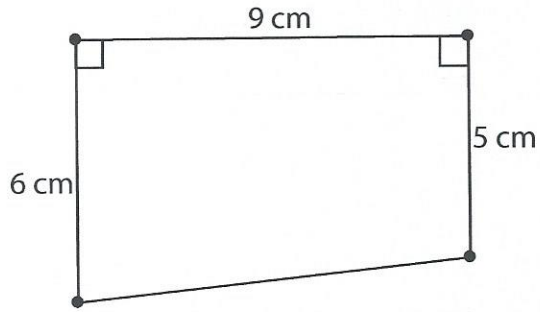
   base = _____

   height = _____



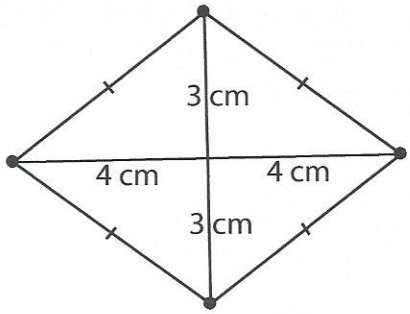
5. Find the area of the trapezoid.

   _____



6. Find the area of the rhombus.

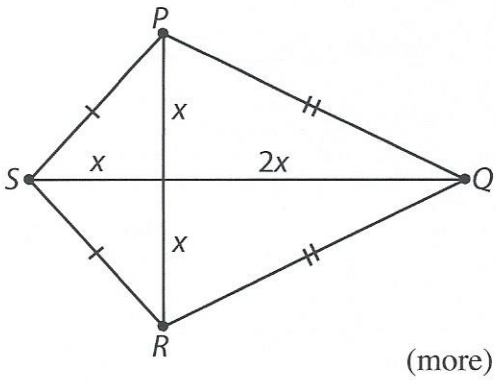
   _____



7. The area of the kite is 48 cm^2. What are the lengths of the diagonals?

   PR = _____

   QS = _____



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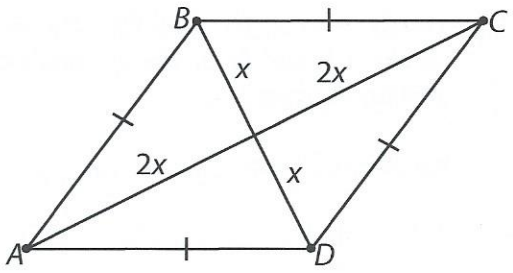
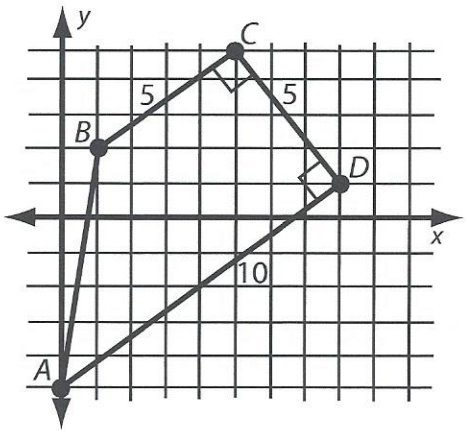
8. The area of $\square ABCD$ is 100 in.^{2} and $AC = 2 \cdot BD$. Find the diagonals.



$AC =$ _____

$BD =$ _____

9. Find the area of the trapezoid with vertices $A(0, -5)$, $B(1, 2)$, $C(5, 5)$, and $D(8, 1)$. *Hint: $BC = CD = 5$, $AD = 10$, $\overline{BC} \perp \overline{CD}$, and $\overline{CD} \perp \overline{AD}$.*



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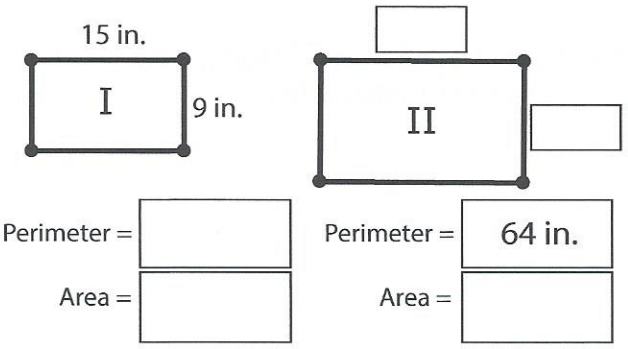
10. Rectangles I and II below are similar. Fill in the missing values for the perimeter and area of rectangle I and length, width, and area of rectangle II.



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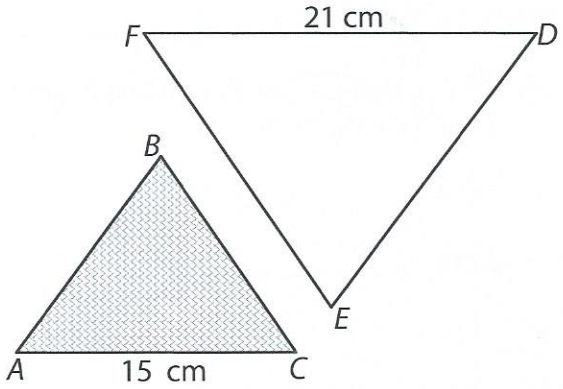
Items 11-13: Use the two triangles to the right.



11. $\triangle ABC \sim \triangle DEF$. Find the ratio of the perimeters and the areas of the shaded to unshaded triangles.

    Perimeter Ratio= _____

    Area Ratio= _____

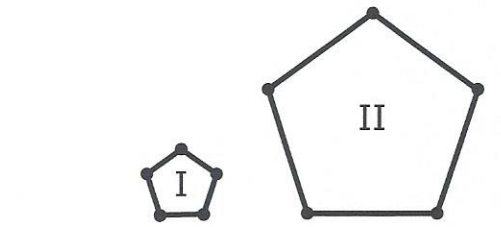
12. If the perimeter of $\triangle ABC$ is 50 cm, what is the perimeter of $\triangle DEF$?

    _____

13. If the area of $\triangle DEF$ is 220.5 cm^2, what is the area of $\triangle ABC$?

    _____

14. Figures I and II are similar pentagons. Find the perimeter of pentagon II.



Perimeter =	25 cm	Perimeter =	
Area =	43 cm^2	Area =	387 cm^2

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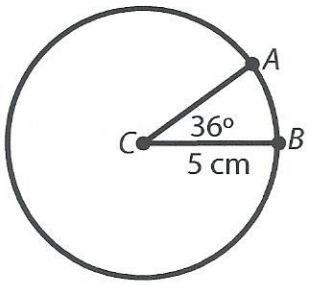
15. A 20 inch diameter bicycle wheel (for a BMX bike) travels how far in one revolution? (Circle answer.)

(A) about 62.83 in. (B) about 5.236 feet (C) about 5 ft, 2.83 in. (D) all of these

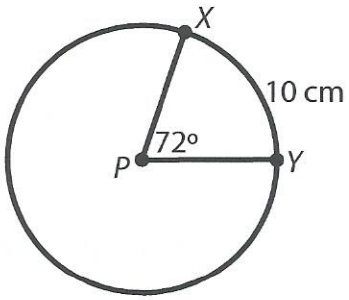
16. ⊙C has a radius of 5 cm. Find the length $\overset{\frown}{AB}$.

_____



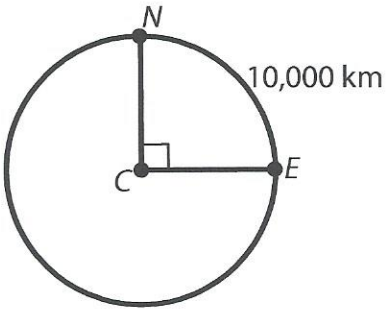
17. Find the circumference of ⊙P.

_____



18. The distance from the north pole to the equator is approximately 10,000 km. Use this information to find an approximate value for the earth's radius.

_____



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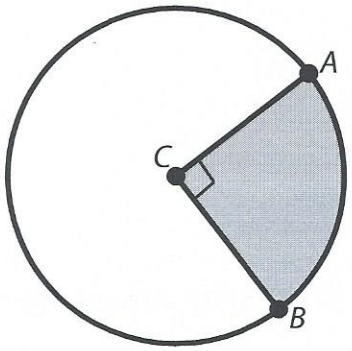
19. The area of a circle is 12.25π cm^2. Find the radius and diameter.

radius = _____

diameter = _____

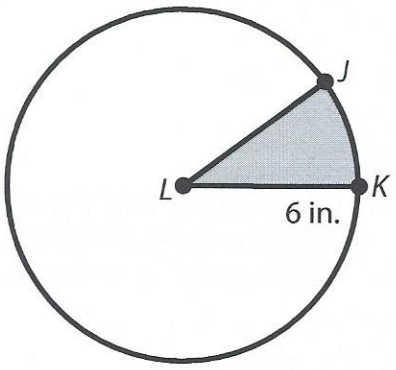
20. If the diameter of $\odot C$ is 4 inches, find the area of the shaded sector ACB.

_____



21. The area of sector JLK in $\odot L$ is 3π in.^{2}. Find $m\overset{\frown}{JK}$.

_____



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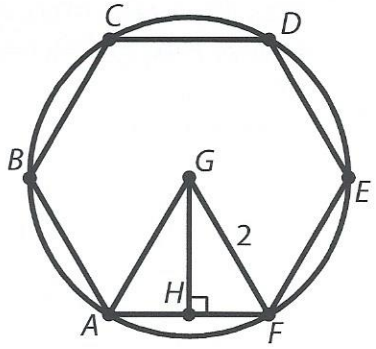
22. Regular hexagon *ABCDEF* is inscribed in ⊙*G* with a radius of 2 units. Find the following:



a) measure of central $\angle AGF$ = _____

b) apothem $a = GH$ = _____

c) side length s = _____

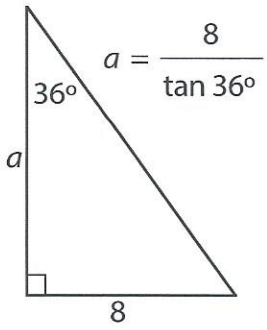
d) Perimeter P = _____

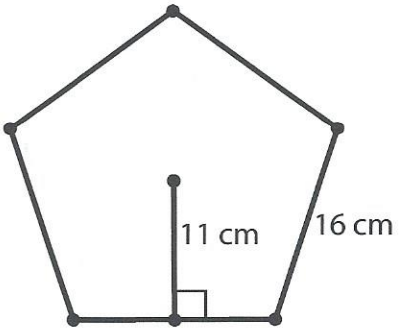
e) Hexagon Area A = _____

23. A regular pentagon with side length 16 cm has an apothem of approximately 11 cm. Find the perimeter and area.

Perimeter = _____

Area = _____





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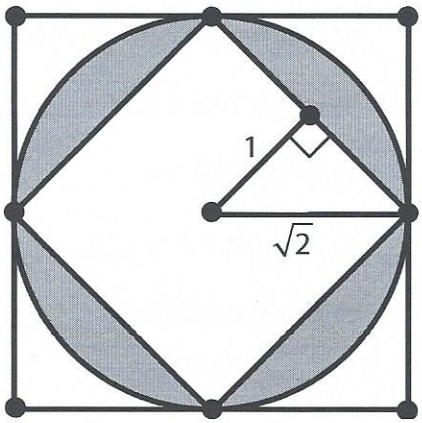
24. A dart is thrown and hits the square target shown. The target has a circle inscribed in it, and within that circle, is inscribed another square. If the dart is equally likely to hit any point on the target, what is the probability that the dart will land on the shaded area?
Hint: The radius of the circle is $\sqrt{2}$. The diameter equals the side length of the outer square.



FILL IN YOUR NAME AND THE OTHER REQUIRED INFORMATION ON EACH PAGE OF THE EXAM AND MAIL THE EXAM TO AMERICAN SCHOOL.