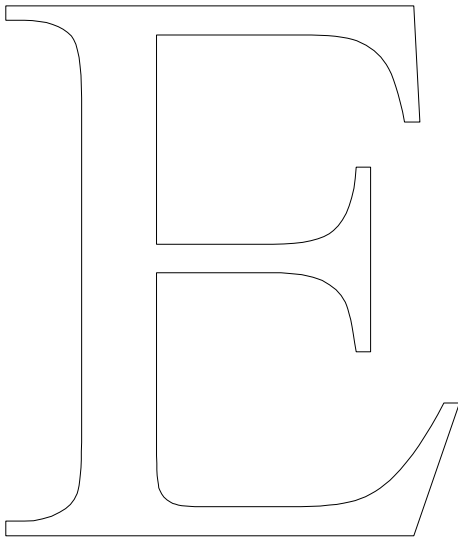


REMT 2006

ANSWERS



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

GEOMETRICAL

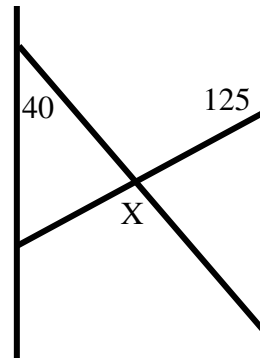
GEMS

LAST NAME

FIRST NAME

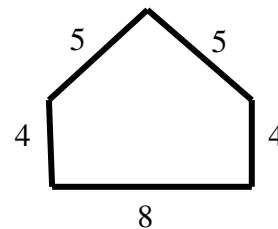
GRADE

1. In this figure, the vertical lines are parallel, and the degree measures of two of the angles are given. What is the degree measure of the angle labeled X ?

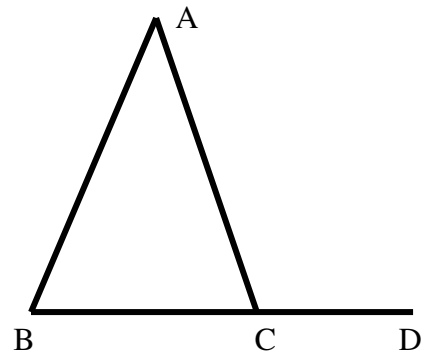


2. What is the degree measure of the angle between the minute hand and the hour hand of a clock when it displays the time as exactly 4:00 ?

3. This figure has right angles at both bottom corners. The length of each side is marked in inches. What is its area in square inches?



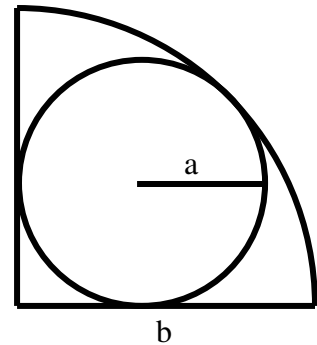
4. This is an isosceles triangle, with $AB = AC$, and with the base BC extended to D . If angle BAC measures 40 degrees, what is the degree measure of angle ACD ?



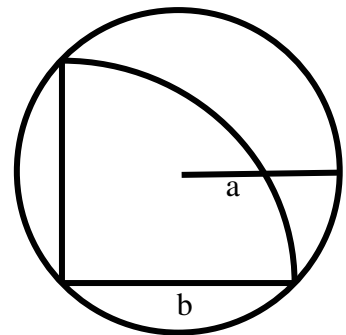
5. A right triangle has legs of length 7 and 24. What is its perimeter?

6. A right triangle has legs of length 7 and 24. What is its area?

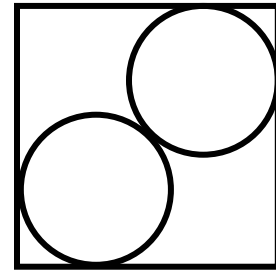
7. A circle of radius a is inscribed in a quadrant of a circle whose radius is b . What is the value of the ratio a/b ?



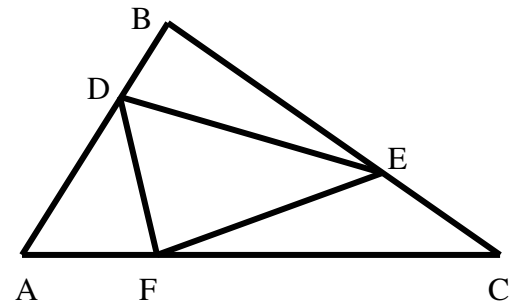
8. A circle of radius a is circumscribed about a quadrant of a circle whose radius is b . What is the value of the ratio a/b ?



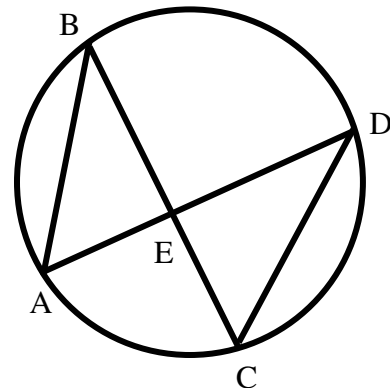
9. A figure composed of two circles of radius 1 which are tangent to each other is inscribed in a square. What is the area of this square?



10. In triangle ABC , D is $\frac{2}{3}$ of the way from A to B , E is $\frac{2}{3}$ of the way from B to C , and F is $\frac{2}{3}$ of the way from C to A . What is the ratio of the area of triangle DEF to the area of triangle ABC ?



11. A “butterfly” is a figure inscribed in a circle by cyclically connecting four points on the circle in such a way that two of the connecting segments cross. In this butterfly, angle ABC measures 42 degrees and angle BCD measures 68 degrees. What is the degree measure of angle DEB ?



12. A 12 by 12 by 12 inch cube has had a triangular pyramid sliced off one corner. Three of the vertices of this pyramid were the midpoints of three of the sides of the cube, as shown. What is the volume of this pyramid, in cubic inches?

