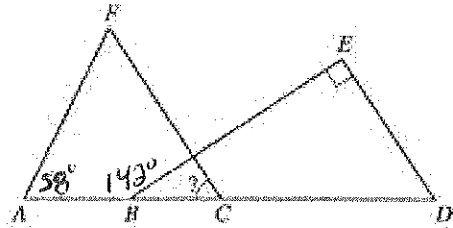


4) In the figure below, $A, B, C,$ and D are collinear, FC is parallel to ED , BE is perpendicular to ED , and the measures of $\angle FAB$ and $\angle EBA$ are as marked.

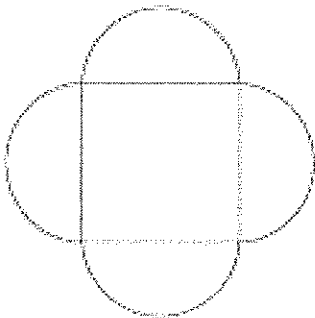
What is the measure of $\angle FCB$?



5) The geometric figure shown below consists of a square and 4 semicircles.

The diameters of the semicircles are the sides of the square, and each diameter is 14 centimeters long.

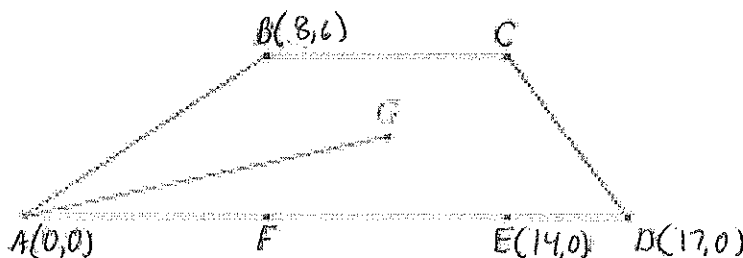
What is the closest approximation of the total area, in square centimeters, of this geometric figure?



6) Quadrilateral $ABCD$ is drawn on the standard (x,y) coordinate plane as shown below, with points E and F on AD .

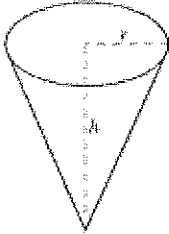
Point G is the center of rectangle $BCEF$.

How many coordinate units long is AG ?



1) The volume, V , of the right circular cone with radius r and height h , shown below, can be found using the formula $V = \frac{1}{3} \pi r^2 h$. A cone-shaped paper cup has a volume of 162 cubic centimeters and a height of 9 centimeters.

What is the radius, to the nearest centimeter, of the paper cup?



2) A boat departs Port Isabelle, Texas, traveling to an oil rig. The oil rig is located 10 miles east and 8 miles north of the boat's departure point. About how many miles is the oil rig from the departure point?

3) Points A , B , C , and D are on a line such that B is between A and C , and C is between B and D .

The distance from A to B is 8 units.

The distance from B to C is twice the distance from A to B , and the distance from C to D is twice the distance from B to C .

What is the distance, in units, from the midpoint of BC to the midpoint of CD ?