

**Assignment #1 – Distance, Midpoint and Point of Division**  
**Math CST 404**

Due:

Name:

**A – Multiple Choice – select only one answer, 4 points each.**

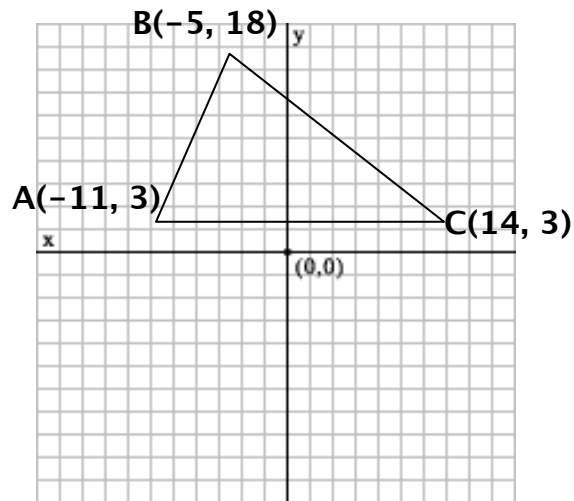
1. Given A(0, -10) and B(5, 68) what is the midpoint of line AB?
  - a) (10, 116)
  - b) (2.5, 29)
  - c) (5, 29)
  - d) (2.5, 58)
2. Given A(-3, 1) and B(4, -25) what is the distance between points A and B?
  - a) 725
  - b) 577
  - c) 26.93
  - d) 24.02
3. Given A(-3, 1) and B(22, -39), what are the coordinates of the point P which divides AB in a ratio of 4 : 1?
  - a) (97, -159)
  - b) (17, -31)
  - c) (18.2, -29.4)
  - d) (20, -32)
4. Given A(4, 10) and B(28, 106), into what fraction does the point P(20, 74) divide the line AB?
  - a)  $\frac{3}{2}$
  - b)  $\frac{2}{3}$
  - c)  $\frac{1}{3}$
  - d)  $\frac{1}{2}$

**B – Short Answer – write your answer in the space provided, 4 points each.**

1. Given  $A(-12, 2)$  and  $B(72, 18)$ , give the coordinates of the point  $P$ , which is  $\frac{7}{8}$  of the way from  $B$  to  $A$ .

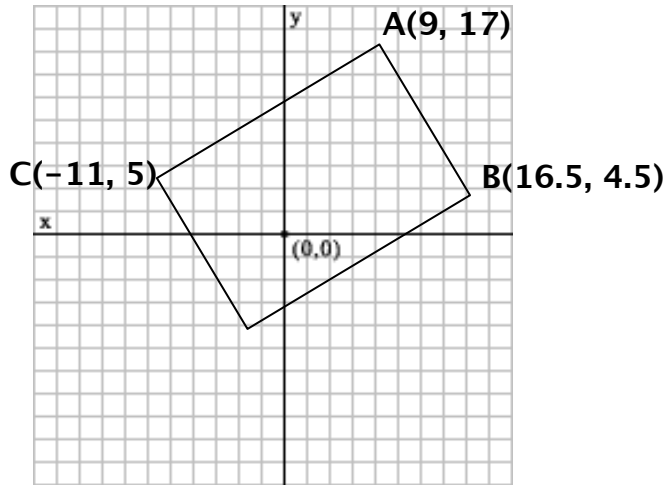
P: ( \_\_\_\_\_, \_\_\_\_\_ )

2. Determine the perimeter, to the nearest tenth of a cm (one decimal place), of triangle  $ABC$ .



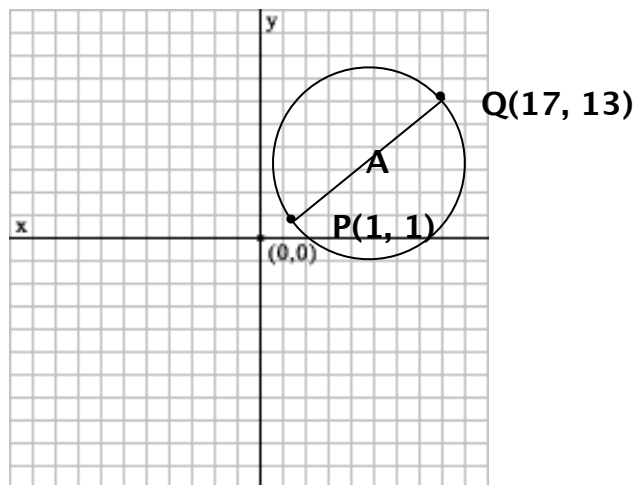
Perimeter of triangle  $ABC$ : \_\_\_\_\_ cm.

3. Determine, to the nearest tenth of a  $\text{cm}^2$  (one decimal place), the area of rectangle ABCD.



Area of rectangle ABCD: \_\_\_\_\_  $\text{cm}^2$ .

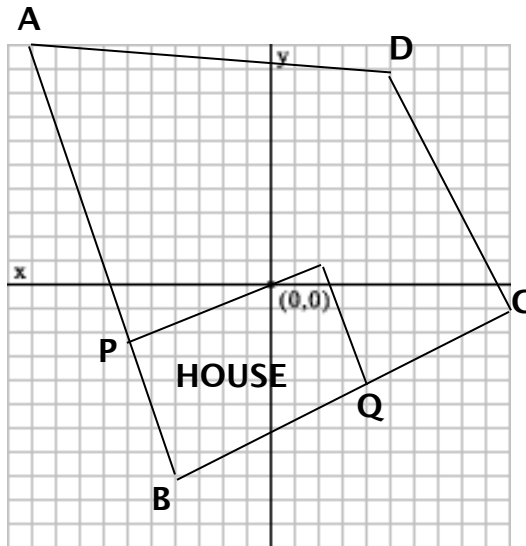
4. Determine, to the nearest tenth of a centimeter (one decimal place), the length of the circumference of the circle below, whose center is A.



Circumference : \_\_\_\_\_ cm.

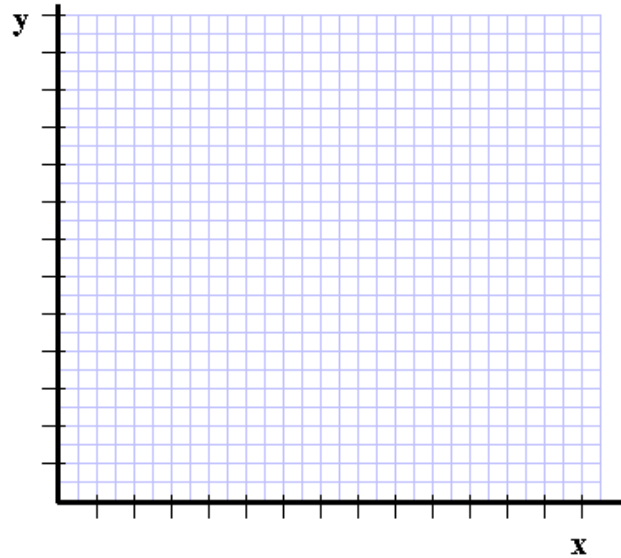
**C - Extended Answer - Show all your work in the space provided, 4 points each.**

- Jeremy owns a piece of land, as seen in the Cartesian plane below. His house is located in the shaded area of the land. Jeremy needs to put a fence up around his land going from one corner of the house, P, all the way around to the other corner Q. Point P is located  $\frac{2}{3}$  of the way from A to B. Point Q is located  $\frac{4}{7}$  of the way from B to C. If the fencing costs \$8.95 per metre, how much will Jeremy pay to put fence on his property?



It will cost Jeremy \$\_\_\_\_\_ to put fence around his property.

2. At a ski hill, an old cable car is being tested before the season starts to see if it needs maintenance. The crew runs the cable car starting from the bottom and it manages to go for 5 trips before breaking down  $\frac{4}{5}$  of the way. Given that the bottom of the cable car is at point  $(0, 0)$  and the top is at point  $(200, 280)$ , what is the total distance, in metres, that the cable car traveled before breaking down? (One “trip” is one way up or one way down).



The total distance that the cable car traveled is \_\_\_\_\_ m.