

**Exam 4 – Part II: Chapters 8 & 9**

NAME \_\_\_\_\_

Math 97, Geometry, Section 3385

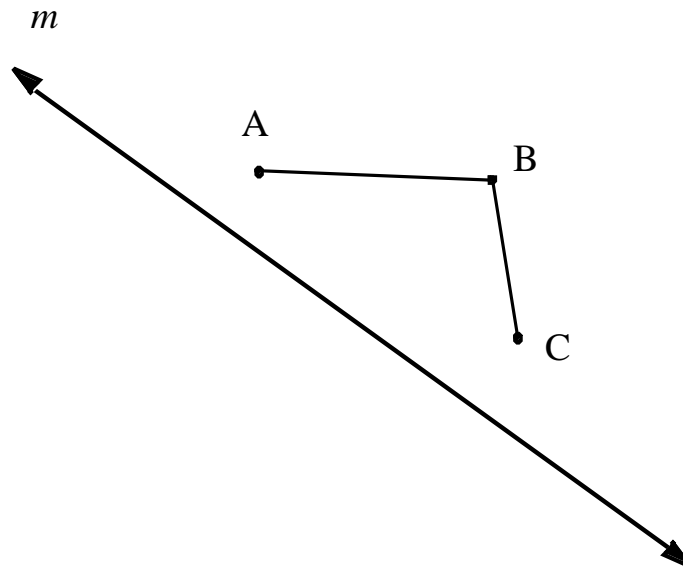
Fall 2009: Michael Orr

**100 points total (30 pts Part I & 70 pts Part II)**

**Show all work to receive full credit. You may use a calculator. CHECK YOUR WORK!!!!**

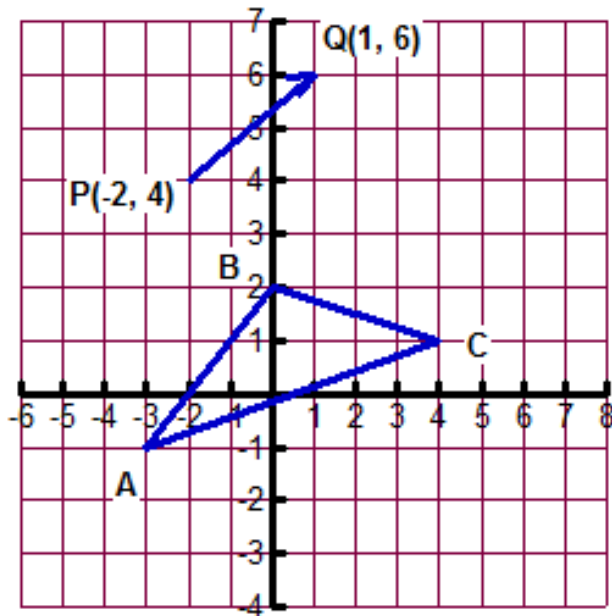
---

1. (10 pts) Reflect  $\angle ABC$  over the given line  $m$ .



2. (12 pts) For the points  $A(3, -2)$  and  $B(9, 4)$ , find the following:
- A. The midpoint of  $\overline{AB}$ .
  
  
  - B. The exact distance  $AB$ .
  
  
  - C. The slope of  $\overline{AB}$ .

3. (8 pts) Find the coordinates of the vertices of  $\triangle A'B'C'$ , the image of  $\triangle ABC$  under the translation  $\overline{PQ}$ . Graph the image.

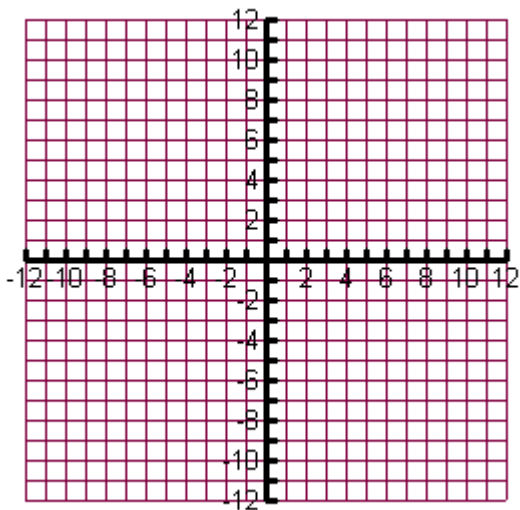


4. (8 pts) Find value of  $x$  such that the line passing through points  $(-3, 12)$  and  $(x, 7)$  is perpendicular to a line having a slope of  $-\frac{5}{4}$ .

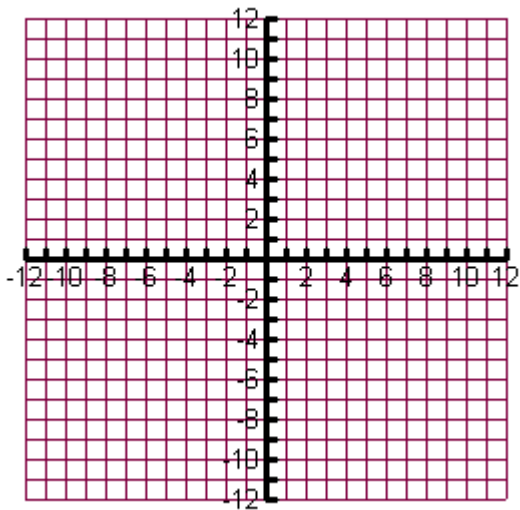
5. (8 pts) Which of the following points are collinear with  $A(-5, -7)$  and  $B(10, 3)$ ?

- A.  $(1, 3)$
- B.  $(-2, -5)$
- C.  $(-17, -15)$
- D.  $(9, 4)$

6. (12 pts) A quadrilateral has vertices  $A(-2, 12)$ ,  $B(-1, -1)$ ,  $C(10, -8)$ , and  $D(9, 5)$ . Show that it is a rhombus.



7. (12 pts) Quadrilateral  $ABCD$  has vertices  $A(-5, 4)$ ,  $B(8, 6)$ ,  $C(12, 0)$ , and  $D(-1, -2)$ . What type of quadrilateral is  $ABCD$ ? Justify your answer.



**EXTRA CREDIT ON BACK**



**BONUS** (total of **10** extra points)



A road rises 11.2 feet in a horizontal distance of 140 feet.  
(3 pts) What is the slope of the road?

(4 pts) What is its angle of inclination (the angle formed with the horizontal)?

(3 pts) Given the figure shown below with  $\overline{AB} \parallel \overline{CD}$  and  $\overline{AD} \parallel \overline{BC}$ . What is  $m\angle 11$ ?

