

MATH/CI 321 Common Final

Fall 2010

Full Name: _____

Section: Math or CI 321

Section number: _____

Instructor: _____

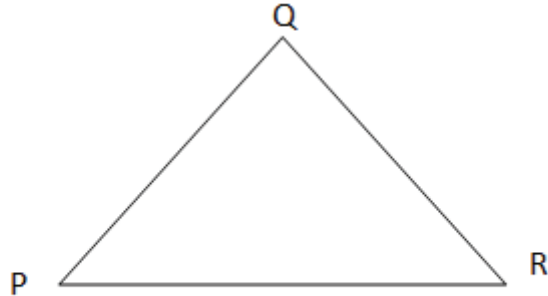
Date: _____

Below is for instructor use only

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14				

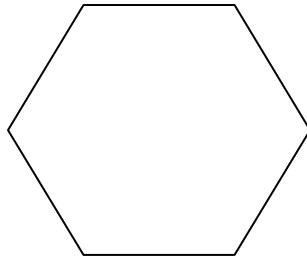
Each problem is worth five (5) points, equally distributed among the sub-questions if any, for a total of 70 points. The actual score X will be converted to a 100-point scale: $Y = X/70 * 100$.

P1. In the triangle below, it is given that $PQ \cong QR$. Prove that $\angle P \cong \angle R$. (Hint: try inserting a median OR an angle bisector.)

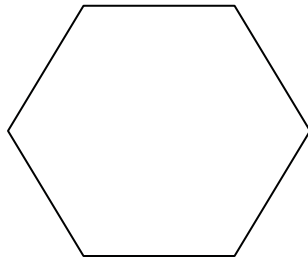


P2.

a) Use the following figure to explain how to figure out the measure of each interior angle of a regular hexagon without a protractor.

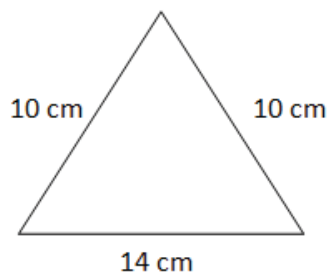


b) What is the measure of one EXTERIOR angle of a regular hexagon?



c) What is the general rule for finding the sum of the measure of the interior angles of an n -gon?

P3. Find the height of the following isosceles triangle. Include units and show all work clearly.



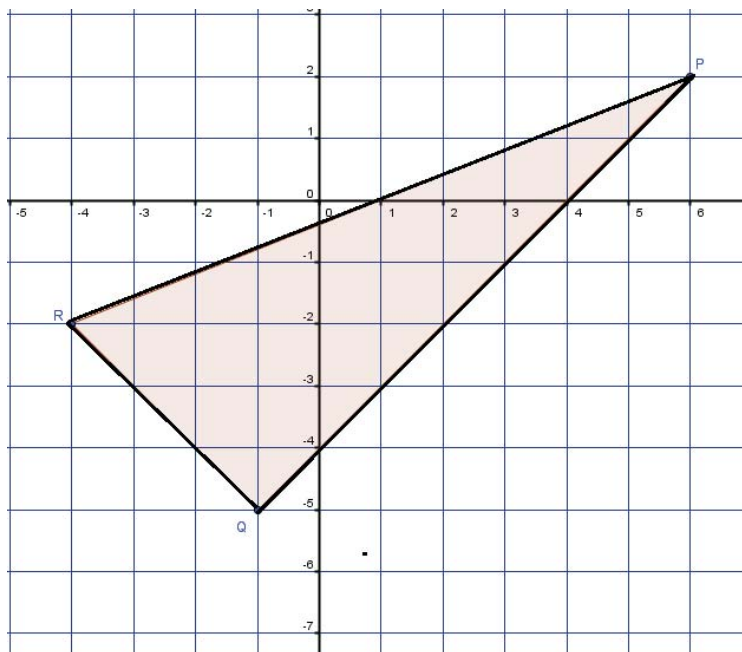
P4

a) Find the following side lengths:

PR= _____

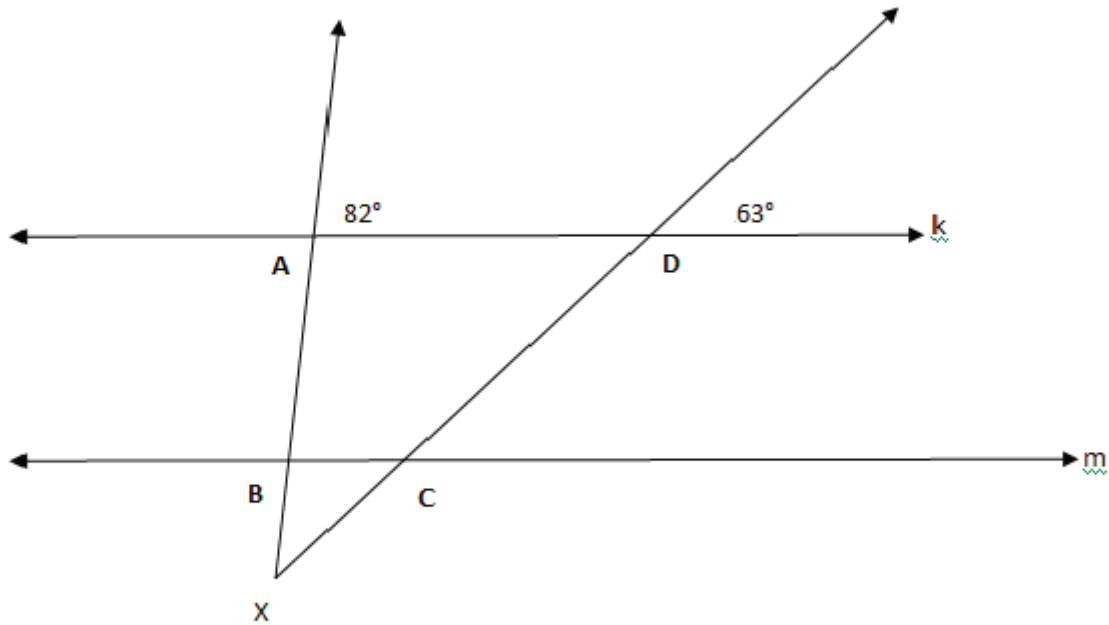
RQ= _____

PQ= _____

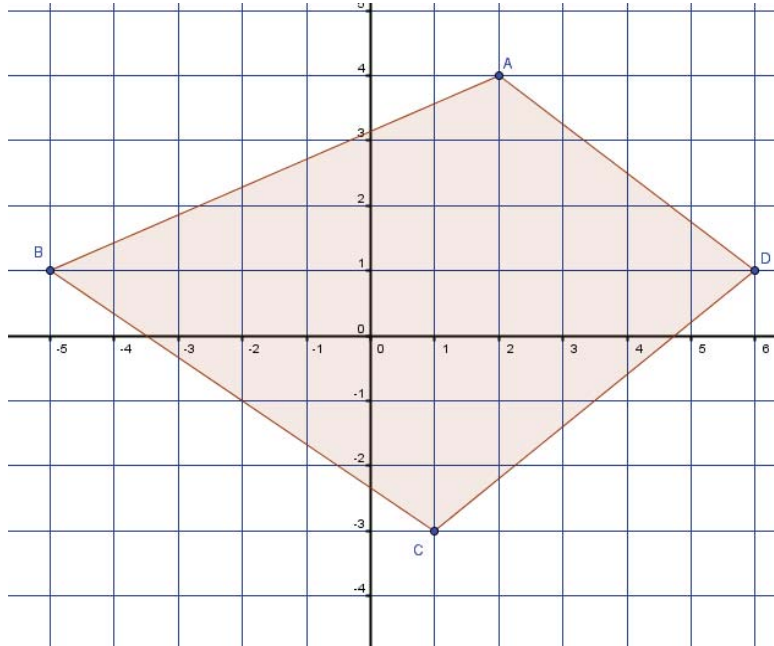


b) Triangle PQR appears as though it may be isosceles. Is it? Explain.

P5. In the figure below it is given that lines k and m are parallel. Find the measure of angle BXC . NOTE: The figure is not drawn to scale.

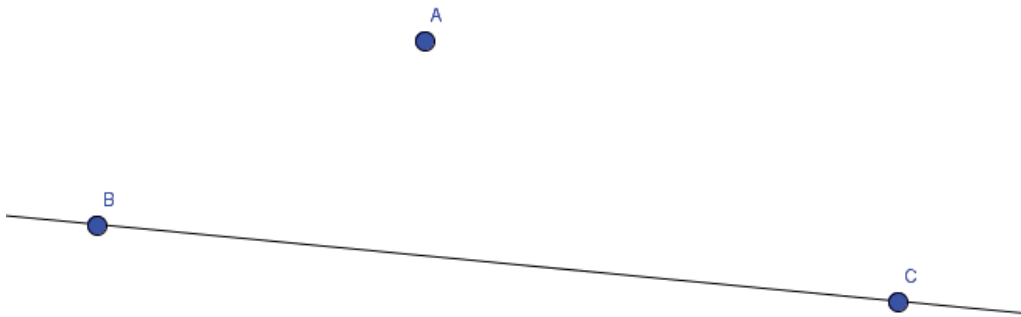


P6. Find the length of the diagonals of the quadrilateral ABCD. Make sure you know *what a diagonal is*.

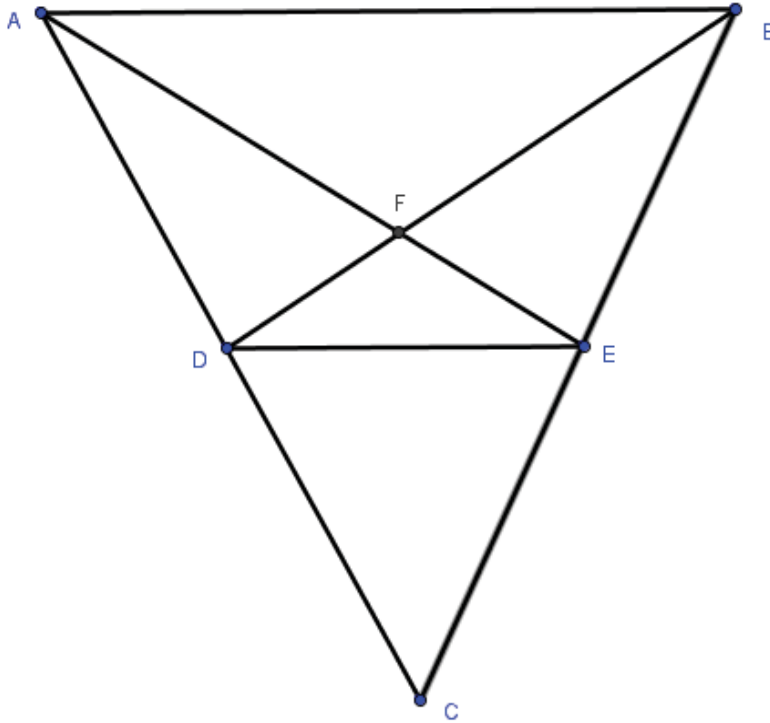


P7. What is the **name** of the platonic solid that has square face? **Sketch** its shape and **explain** why there can only be one platonic solid with square faces. (5pt)

P8. Show how to use *a straightedge and compass* to construct a line through point A which is perpendicular to line BC.



P9. Given that AE is congruent to DB , and that AB is parallel to DE , what other elements of the figure must be congruent? Identify at least two pairs.



P10. In what sense does the following graph mislead the naïve viewer? Produce another bar graph of the same information which corrects this issue.

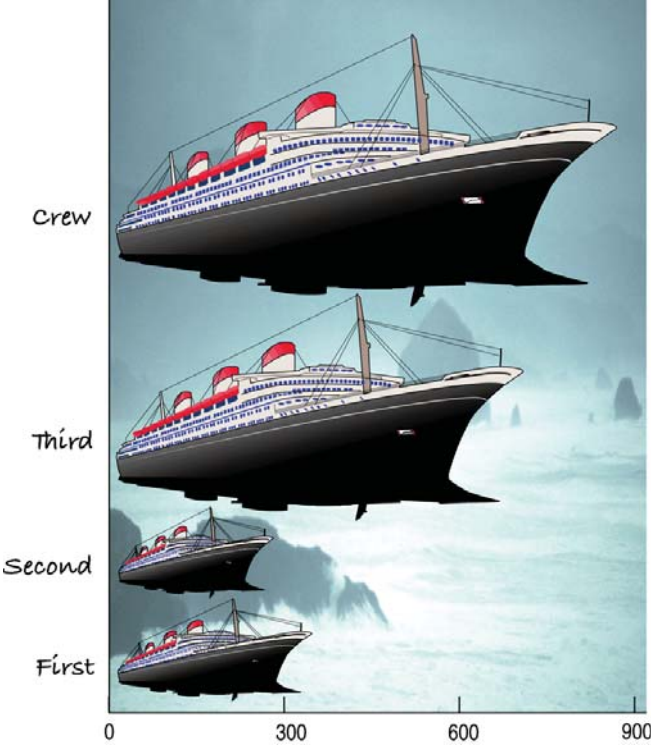
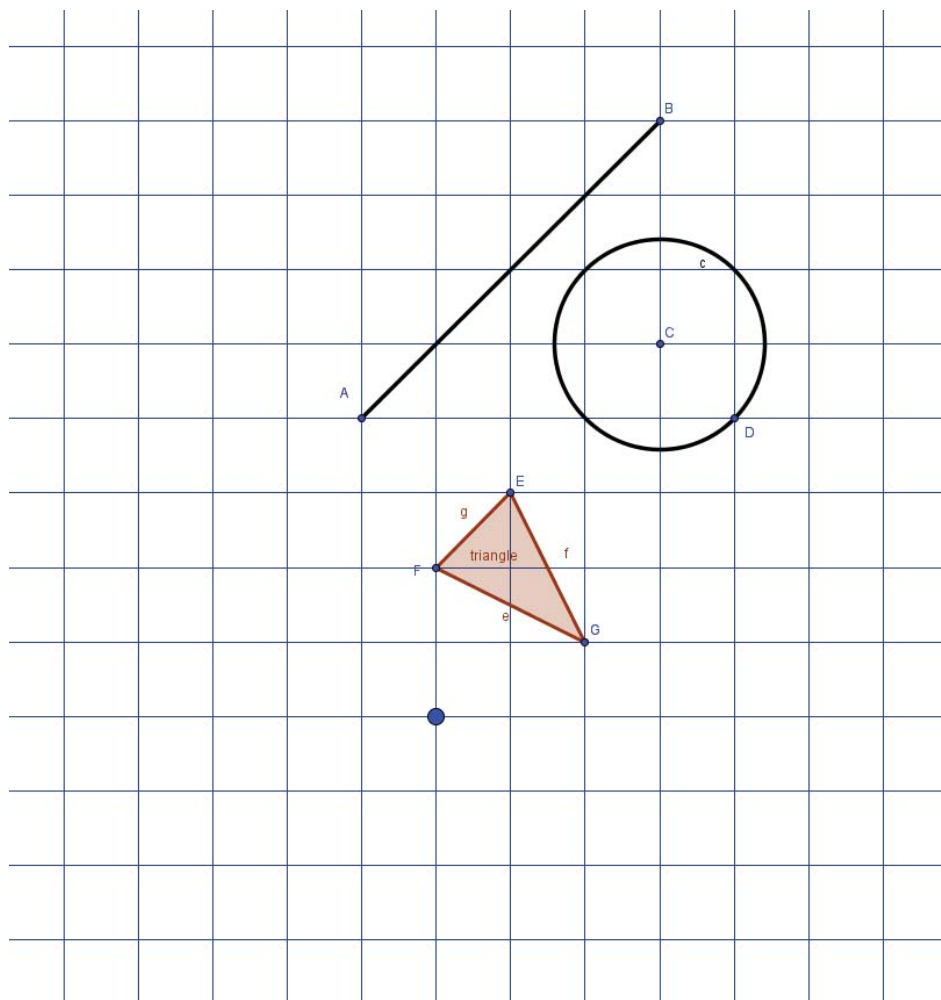


Figure p.10. Number of people on the Titanic, by group (crew or class of passengers).

P11

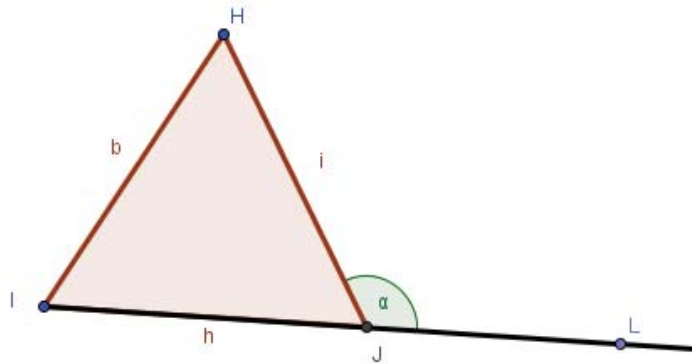
Refer to the following figure,

- Find the reflection of circle c with respect to the mirror line AB .
- Rotate Triangle EFG counter clockwise for 90 degrees.



P12.

In the following figure, triangle HIJ is an equilateral triangle. Find the measure of angle LJH in degrees.



P13

Given the data set

$$X = \{5, 23, 34, 50, 60, 60, 61, 72, 75, 89, 98, 45, 100\}$$

make a box-plot of X and give a five-number summary of the data. Please note the numbers are not sorted out.

P14

A laptop combination lock has four rings of numbers. Each ring has ten numbers (0 through 9). Once the lock is set up, what is the probability that someone can randomly unlock the laptop at his first try? If you make any assumptions, please describe them in detail.

