

Math 366

NEATLY PRINT NAME: _____

Exam 1

STUDENT ID: _____

Spring 2006

DATE: _____

Scarborough

PHONE: _____

EMAIL: _____

SECTION (circle one): 502_{MWF 1:50 pm} 505_{MWF 3pm}

"On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work."

Signature of student

Academic Integrity Task Force, 2004

<http://www.tamu.edu/aggiehonor/FinalTaskForceReport.pdf>

WRITE ALL SOLUTIONS IN THE SPACE PROVIDED; FULL CREDIT WILL NOT BE GIVEN WITHOUT CORRECT ACCOMPANYING WORK. FULLY SIMPLIFY ALL ANSWERS AND GIVE EXACT ANSWERS UNLESS OTHERWISE STATED. WHERE PROVIDED, PUT YOUR FINAL ANSWER IN THE BLANK PROVIDED. POINTS WILL BE DEDUCTED FOR SPELLING ERRORS. REMEMBER YOUR UNITS!

(16pts –2 pts each) 1. True/False. Write ‘true’ or ‘false;’ do not abbreviate.

_____ a. The plane is the union of two mutually disjoint sets: the interior and exterior of a circle.

_____ b. Alternate exterior angles are congruent if, and only if, the two lines cut by the transversal are parallel.

_____ c. The intersection of three distinct planes may be a line.

_____ d. A concave, oblique prism has all its lateral faces bounded by rectangles.

_____ e. An obtuse triangle can also be an acute triangle.

_____ f. All regular polyhedra are convex.

_____ g. The “Seven Bridges of Königsberg” graph is not traversable and is an Eulerian circuit.

_____ h. If two angles share a common vertex and side, then they are adjacent angles.

30 pts - Each blank is worth 5 points on # 2 - 6. Remember to show work!

2. _____ What is the maximum number of intersection points between a triangle and an octagon, where no sides of either polygon are on the same line?

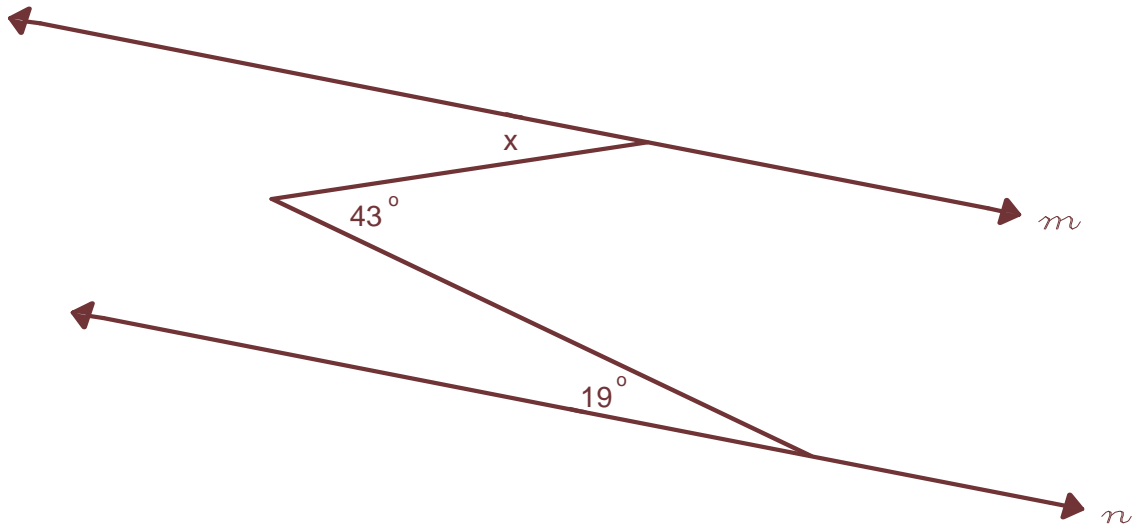
3. _____ If the measure of an angle is $38^{\circ} 49' 27''$, what is the measure of its complement?

4. _____ What are the two Platonic solids that do not have equilateral triangles as their faces? (No work needed on this problem.)

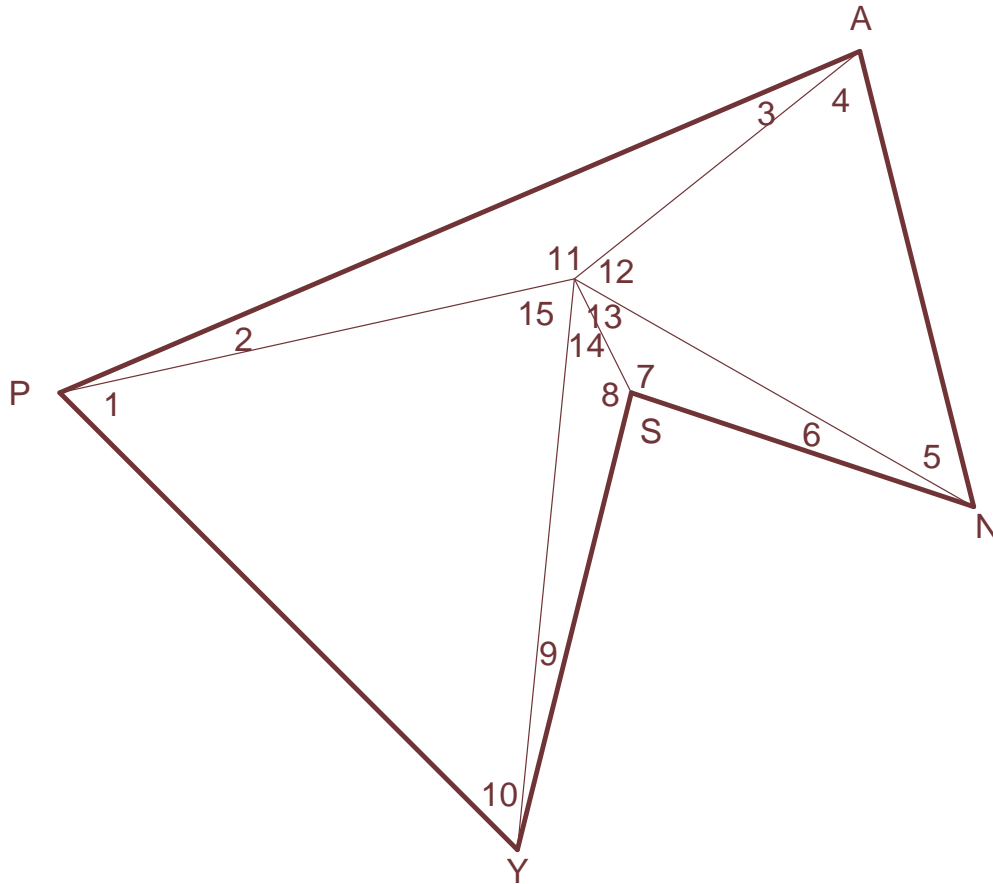
5. _____ "The diagonal of a prism is any segment determined by two vertices that do not lie in the same face."
What is the total number of diagonals that an n-gonal prism has?

6. _____ If there are 12 points in a plane, no three of which are collinear, how many quadrilaterals can be found with those points as vertices?

7. (6pts) _____ Given the following figure with line m parallel to line n , what is the value of x ?

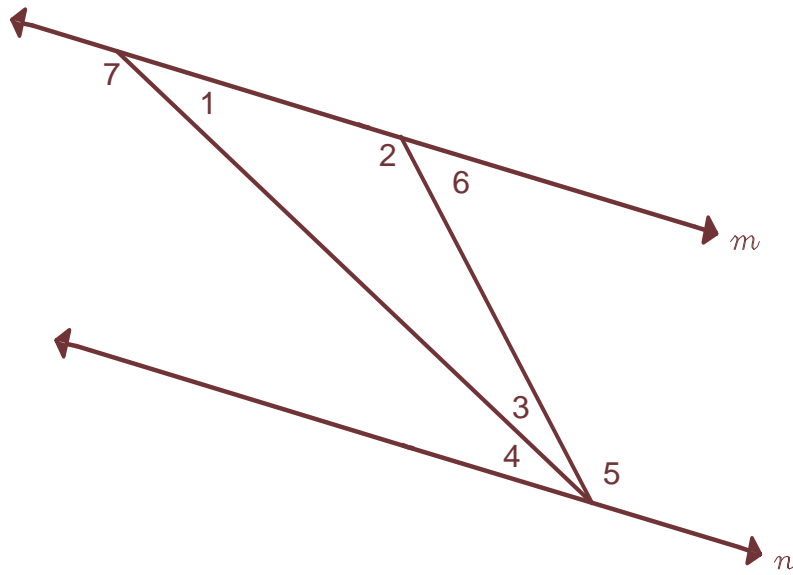


8. (6pts) _____ Find the sum of the measures of the interior angles of the concave pentagon PANSY.



10. (8pts) In a convex hexagon the largest angle measure is 160 degrees. If the measures of all the interior angles form an arithmetic sequence, find the measure of the smallest interior angle.

11. (10pts) Prove that the sum of the interior angles of a triangle is 180 degrees.



1. Line m is parallel to line n .
Figure as shown.

1. Given

2.

2.

QED (*Quod erat demonstrandum*)
Latin for "which was to be demonstrated"