MTH 202.1 FS 2007 EXAM 2 Name: _____ **PID:** _____

Instructions:

You must show ALL the work required in ALL questions. Use only the space provided for each question. Read the statements of the questions very carefully. You will be graded on your methods, not just your answers.

You need only a pencil and an eraser for the exam. Any use of rulers, protractors, and calculators is prohibited.

You will have EXACTLY 50 minutes for the exam, which consists of problems numbered 1 – 13. Request a new copy of the exam if any of the problems are missing or hard to read.

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1) (6 points) Indicate whether the given statement is "always true" (**T**) or "not always true" (**F**).

	Trapezoid	Kite	Parallelogram	Rectangle	Rhombus	Square
There are 2 pairs of adjacent equal sides.						

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2) (10 points) Complete the following definitions.

a) A polygon is regular if

i) _____,

and *ii)* _____.

b) A unit square is a _____.

c) The square unit is the _____.

d) State the complete precise definition of the *intersection* of regions *R* and *S*.

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3) (6 points) Sketch rectangles of perimeter 20 cm, with area: a) 9 cm^2. b) 0.99 cm^2.

4) (6 points) If *FGHI* is a rectangle, and *IJHK* is a rhombus, circle the value of $\angle m$.

PM 6B
p67
#4

12 24 30 42 48

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5) (8 points) *ABCD* is a rectangle. Find the values of *x* and *y*, showing the reasoning and facts used.

NEM1
P283
#3g

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6) (8 points) Teacher Explanation: Draw a series of pictures (with short one-sentence explanations for each picture) to explain the "zoom-out" demonstration of "the sum of exterior angles of a convex polygon is 360".

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7) (8 points) Teacher Explanation: Draw a series of pictures (with short one-sentence explanations for each picture) to explain why there is no SSA test for triangle congruence.

8) (8 points) State the congruent triangles and the test used. [Example: $\Delta XYZ \cong \Delta RST$ (SSS)]

HW13
#1a

WS06
#2a

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9) (10 points) The area of a parallelogram is 30 cm^2. One of the sides is 10 cm and one height is 6 cm. Find the other height and the perimeter.

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10) (10 points) Give a Teacher Solution, including *a sketch with labels for lengths and vertices*:

A rectangular flower-bed measures 9 meters by 11 meters.
It has a path 2 meters wide around it. Find the area of the path.

11) (10 points) Give a proof for the following. Make sure to include the "setup" steps and a sketch.

In a quadrilateral *ABCD*, if $\overline{AC}$ bisects $\angle BAD$ and $\angle BCD$, then $AB = AD$ and $CB = CD$.

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12) (10 points) In the figure, $\overline{AB} \parallel \overline{CD}$ and $\overline{CB} \parallel \overline{ED}$. Prove that $\angle ABC = \angle CDE$.

HW12
#9

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13) Extra Credit: (5 points) Find the area of the given composite figure.