Text: <u>Reconceptualizing Mathematics</u> 2nd Edition by Sowder, Sowder, Nickerson, W.H. Freeman, 2014

Materials needed for the course: graph paper, isometric dot paper, ¼in. dot paper, unlined paper, cm ruler, protractor, and scissors. Bring these with you <u>every day</u> to class. Be responsible and do not rely on someone else to do this for you. Also needed: stapler, tape, and compass.

Follow instructions written here in addition to instructions in the text.   Math 13900 web page: www.math.purdue.edu/MA13900

Lesson	Section	Page	Problems
1	16.1	p378	1bdgi, 2bdfhjlnp, 3a, 5, 6cd, 7def, 9 (make a table for 3, 4, 5, 6, 7, 8, 10, 12, 20, and n-sided polygons)
2	16.1/2	p380	11abcdek, 13, 14abcdef, 15, 16c(extend the table), 18bdfh
		p384	1(redraw Venn diagram correctly), 2bdfhjln, 3bd(shared characteristics), 4bdf
3	16.3	p389	2(copy and complete chart), 3bde, 4b(draw <u>large</u> scalene triangle on unlined paper; measure all angles and sides(cm) after following instructions), 6bc, 8a(find 4 more examples that work and show arithmetic to verify)

No class will be held on Monday, August 31. 2015

4	17.1	p399	1, 2, 3, 4, 5ab(draw front, right, top, and left for each), 6ab(use the dot paper in the text and then make a photocopy) Also do p401 Activity 3 – follow the instructions and <u>bring the kit with you for L5</u> along with the worksheet for L5.

L5: Bring your kit of shapes.

5	17.2	p403	1, 2b, 3, 4, 5bc, 6ab, 7a, 9, 10, 13, 14
6	17.3	p410	3, 4abc, 5cd, 7, 10ac, 13(use <u>graph</u> paper to draw all possible pentominoes; determine the perimeter of each; answer all questions), 14a, 16a, 19bc
7	17.4	p415	1(shade 2 cubes to right in I and 2 cubes on top in II), 3, 4, 6, 9(use unlined paper to draw a LARGE quadrilateral with no equal sides or angles; draw the second figure upside down)
8	17.5	p418	1bdfhjl, 4ac, 6, 7b(count F,V,E for first figure), 9ab, 10(draw a total of 4)
9	18.1	p426	1, 4bdf, 5bde, 6, 7bd, 8bde, 11, 12

L10: Bring kit.

10	18.2	p431	2bd, 3bd, 4(Label one vertex 'A'; its opposite vertex 'B'; and the remaining vertices 'CDEF'. Use those to list the vertices or edges or faces that the plane or axis will go through), 5c, 6(two separate drawings for ea), 7, 8, 9

Exam 1   Tuesday, September 22, 2015 at 8:00 in BRNG 2290
No class will be held on Wednesday, September 23, 2015

11	19.1	p439	2c*(show two distinct tessellations), 3a(start with a 3cm square, use both methods (p438) on the same square, and make 8 copies of your figure to show that it tessellates), 4*, 6a, 7*(use the "w" pentomino) *NOTE: use graph paper

L12: Bring kit.

12	19.2/20.1	p442	2, 3abc; p450 5a*, 6a*(scalene)(*use a vertex for center point), 22
13	20.1	p450	1b, 2, 3, 8ab, 9bd, 10a(show example), 15bd, 17def, 19bdfh
14	20.2	p458	1, 3bd, 4ad(also ratio of areas), 5abcd, 6, 7

L15: Print off and bring worksheet for L15.

15	20.3	p463	4*, 5*(*list dimensions in increasing order), 6, 8, 9, 11, 12, 16, 18ac, 22, 23

L16: Bring a compass from now on.

16   21.1   p474   1, 2(use 4cm radius), 3a, 4ab(draw figure for b – show lines of symmetry, pts of
                                 rotational symmetry), 5cdg(use 4cm radius for each), 6(f is 180°), 8XY

17   21.1   p476   (unlined paper)9(large triangle), 10ac, 11a, 12d, 13bd, 15b, 16cd, 19, 20c, 21bd

L18 Print off and bring worksheet for L18. Bring cone and cylinder from kit; scissors and tape.

18   21.2   p482   1, 2, 3bc, 4ab, 6bd, 7, 8, 9

19   22.1   p492   1, 2, 3, 4, 7(make 7 distinct shapes – put matching sides of triangles together)

Exam 2   Monday, October 19, 2015 at 8:00 in BRNG 2290
No class will be held on Wednesday, October 21, 2015

20   22.2   p496   (two kinds of dot paper needed) 2bce, 4, 5abce, 6abce, 7, 8, 10

L21 Print off and bring worksheet for L21.

21   22.3   p502   (unlined paper and dot paper) 2, 3ad, 4, 5, 6

L22 Print off and bring 3 worksheets for L22.

22   22.4   p507   1, 2(use a non-symmetrical figure)bd f(if a>b) h, 4bdf, 5(unlined paper), 6b,
                                 7(just name rigid motion), 8, 9a, 13bdf, 16(first part only)

L23 Print off and bring worksheet for L23.

23   22.5   p512   1, 2b, 3, 4, 5ac, 6, 8, 10, 11b, 12(no right angles)

L24 Bring centimeter grid paper and tape. Look for the grid paper on the 13900 web page.

24   22.6   p515   1(google "cross section of a pear" and make 2 drawings/each), 2, 4(label pictures
                                 1, 2, 3 for reference), 5(create a core without rotation symmetry and then
                                 create your pattern by rotating it), 7

         23.1   p521   1bdfhj, 2bdfhj, 4bcfhjln, 5bdf, 6b, 8bcd, 9efgh, 10

25   23.1   p521   12(no exp), 13, 14acd, 15, 16bdfh, 17bd, 18bd, 19, 22bdf, 23, 25

26   23.2   p529   1c, 3, 4, 5, 6bdhi, 7a(name 10)c(name6), 9, 12, 14, 16bdfh, 17, 18ac, 20

27   23.2   p532   22b, 24, 25bdf, 26defg, 27bcd, 31, 34a, 35, 39bdf, 40bdf, 41b, 42a, 43

28   24.1   p549   5bdfh, 6ab, 7b, 9bd, 11bd, 12bdfhj, 13b, 14b, 15a, 16, 17, 21a, 26, 28d

29   24.2   p556   1bdfjl, 2bd, 3bdf, 4ac, 6, 7bd, 8bc, 9b, 10bd, 12, 14b, 17, 19bdfhjl, 21bd

Exam 3   Monday, November 16, 2015 at 8:00 in BRNG 2290
No class will be held on Wednesday, November 18, 2015

30   24.3   p564   1,2

         25.1   p571   2bd, 3, 4b, 5, 6, 8b, 9bce, 14, 16ab, 17, 18bdfh

***We will meet on Monday, November 23, 2015 in a computer lab, BRNG B286, for lesson 31.*

**31   25.1   p573   18ijkl, 19b, 21acfg, 23ab, 24b, 25bd, 26, 29, 35, 37(let r = 10, 13)

L32 Bring shape I from kit.

32   25.2   p581   2, 3a, 4, 5, 7, 8, 12

33   25.2   p582   13, 16, 18bd, 20, 21, 22bd

         26.1   p591   1bc, 2, 3bdf(exact answer only), 4bd, 6bd

34   26.1   p592   7, 8, 9(exact answer only), 10a, 13abcde, 14ab, 15bc, 17(find all 19 exact lengths),
                                 18b, 20ab, 22

35   26.2   p599   4bc, 9, 10ac, 11, 12, 13ab, 16ab, 18a, 20, 23bde, 27b

Math 13900 web page: www.math.purdue.edu/MA13900