

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

Materials needed for the course: graph paper, isometric dot paper, 1/4in. dot paper, unlined paper, cm ruler, protractor, and scissors. Bring these with you every day 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 p384	11abcdek, 13, 14abcdef, 15, 16c(extend the table), 18bdfh 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)
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.
<i>L5: Bring your kit of shapes.</i>			
5	17.2	p403	1, 2b, 3, 4, 5bc, 6ab, 7a, 9, 10, 13, 14 <i>No class will be held on Monday, September 8, 2014</i>
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
<i>L10: Bring kit.</i>			
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 Monday, September 22, 2014 at 8:00 pm in RAWL 1086

No class on Wednesday, September 24, 2014.

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
<i>L12: Bring kit.</i>			
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*(<i>*list dimensions in increasing order</i>), 6, 8, 9, 11, 12, 16, 18ac, 22, 23
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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 20, 2014 at 8:00 pm in RAWL 1086

No class on Wednesday, October 22, 2014.

- 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 Tuesday, November 18, 2014 at 8:00 pm in RAWL 1086

No class on Wednesday, November 19, 2014

- 30 24.3 p564 1,2
- 25.1 p571 2bd, 3, 4b, 5, 6, 8b, 9bce, 14, 16ab, 17, 18bdfh

****We will meet on Mon, Nov 24th in BRNG B286 at our regular time. Print off and bring worksheet for L31.**

- **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, 18b, 20ab, 22
- 35 26.2 p599 4bc, 9, 10ac, 11, 12, 13ab, 16ab, 18a, 20, 23bde, 27b