MATH 213 COURSE SCORES, FALL 2010

Scores for: _____

FRACTIONS, DECIMALS AND PERCENTS SKILLS TEST								
In class	Pass / NP	Individual						

ATTENDANCE AND VOLUNTEERING RECORD *mark the days you attend and mark V on the days you volunteer									
Week 1		**Week 2**		**Week 3**		**Week 4**		**Week 5**	
M		M		M		M		M	
T		T		T		T		T	
R		R		R		R		R	
F		F		F		F		F	
Week 6		**Week 7**		**Week 8**		**Week 9**		**Week 10**	
M		M		M		M		M	
T		T		T		T		T	
R		R		R		Thanksgiving		R	
F		F		F		Holiday		F	

GRADED HOMEWORK—29%

Quizzes – 15%		Activity Follow-Up	Computer Labs		Web Sites		Other Assignments
		9.1					
		9.2					
		9.3					
		9.4					
		10.1			**Email**		
		10.2			**____ / 5**		
		10.3					
		11.1					
Quiz TOTAL		11.2			**Chapter Online**		
_____/_____		11.3					
Quiz PERCENT							
_____		**HW TOTAL _____ / _____**			**HW PERCENT _____**		

Exam 1		Exam 2		Exam 3	

EXAMS, TOTALS and PROJECTED COURSE GRADE					
EX 1 * 0.12		HW % * 0.29		**PROJECTED COURSE GRADE**	
EX 2 * 0.12		Total	/80	**Desired Range**	
EX 3* 0.12		Pre-final %	Total / 80 =	**Needed on Final (20)**	
Quiz % * 15			_____	**Needed % on Final**	

% Range	Grade	% Range	Grade	% Range	Grade	% Range	Grade	% Range
93 –100	A	87 – 89	B+	77 – 79	C+	67 – 69	D+	< 60
90 – 92	A-	83 – 86	B	73 – 76	C	63 – 66	D	**Grade**
		80 – 82	B-	70 – 72	C-	60 – 62	D-	F

Mth 213   Fractions, Decimals, and Percents Skills Test

You are **required** to pass a Fractions, Decimals, and Percents (FD&P) Skills Test in Mth213. There are 21 problems. You must get at least 17 of them correct to pass the FD&P Skills Test. You have 30 minutes in which to do this. YOU MAY NOT USE A CALCULATOR. You may use as much scratch paper as you wish.

The test covers the four basic arithmetic operations on fractions, basic problems involving percents, and decimals (four basic operations and converting rational numbers to fractions). If you know some basic properties of arithmetic, such as the distributive property and the multiplication property of zero, you can do many of the problems very quickly and without pencil-work.

A small amount of time will be provided in class to prepare for the FD&P Skills Test. However, most of your preparation was done in Mth212. You will receive a Practice FD&P Skills Test, and you should do this practice several times until you are **extremely** comfortable with the problems.

One-half hour of class time during the first or second week of the term will be used to administer the FD&P Skills Test to your class. (See your class schedule.) If you pass it at that time you will receive 10 points of extra credit towards your Mth213 grade. If you do not pass it you will need to retake it. In order to do a retake you must call Sharyne Ryals, the math department office manager, at 503-838-8465 to make an appointment. You may also visit her office in MNB 116 to schedule an appointment. There will be NO more class time spent on the FD&P Skills Test in Mth213.

If you pass the test after the initial class offering but before the end of the fourth week of the term you will receive 5 points extra credit towards your grade in Mth213.

YOU MUST PASS THE FD&P SKILLS TEST ON OR BEFORE
FRIDAY OF DEAD WEEK.
IF YOU DO NOT, YOU WILL NEED TO RETAKE MTH213.

If you retake the FD&P Skills Test and do not pass it, you should get some help! Immediately! You can see your instructor, use the Tutoring Center, ask another (more skilled) student, and/or review your Mth212 work from the text.

After three retakes of the FD&P Skills Test, if you have still not passed, Sharyne will give you a Retake Permission Slip. You are **required** to take this slip to your instructor before you can proceed. Your instructor will provide you with additional, individual assistance and will then write the number of times you can continue retaking the FD&P Skills Test on the Retake Permission Slip. You must present the completed Retake Permission Slip to Sharyne before further retesting can occur. This process will repeat until you have passed the FD&P Skills Test or until Dead Week ends, whichever comes first.

If you have any questions now is the time to ask! You are encouraged to contact your instructor:

Email: kruczekk@wou.edu
Office Phone: 503-838-8829

DO NOT DELAY PREPARATION FOR THE FD&P SKILLS TEST!!!

Mth213 Fractions, Decimals, and Percents Skills Test Retake Permission Slip

STUDENT'S FULL NAME _____

INSTRUCTOR'S NAME _____

CLASS HOUR _____   DATE _____

This student has instructor permission to retake the Fractions Skills Test _____ times. If the student is unable to pass the Fractions Skills Test after this number of retakes, s/he is required to see the instructor for more assistance before further retesting can occur.

Instructor Signature _____

PRACTICE FRACTIONS, DECIMALS, PERCENTS

SKILLS TEST #1

Make each sentence or statement TRUE by filling in the blank frame <u>WITHOUT</u> the use of a CALCULATOR! Passing criterion is AT LEAST 17 correct in ONE-HALF HOUR.

I. Fill in the blank frame with the <u>SIMPLEST NAME</u> for a fraction.

1. $\dfrac{11}{15} + \boxed{} = \dfrac{9}{10}$

2. $\dfrac{23}{24} - \dfrac{3}{8} = \boxed{}$

3. $\boxed{} - \dfrac{7}{30} = \dfrac{9}{10}$

4. $\left(\dfrac{5}{9} \times \dfrac{17}{30}\right) \times 36 = \boxed{}$

5. $\boxed{} \times \dfrac{5}{12} = \dfrac{15}{2}$

6. $\left(9\dfrac{7}{8}\right) \times 9 = \boxed{}$

7. $\dfrac{2}{3} \div 4 = \boxed{}$

8. $\boxed{} \div \dfrac{9}{8} = \dfrac{2}{3}$

9. $\dfrac{1}{5} \div \boxed{} = \dfrac{1}{3}$

10. $\dfrac{4}{9} \times \left(\dfrac{27}{16} \cdot \boxed{}\right) = \left(\dfrac{4}{9} \times \dfrac{27}{16}\right) \times \dfrac{8}{27}$

11. $\dfrac{4}{5} = \dfrac{\boxed{}}{4}$

12. $\dfrac{2}{3} \times \left(\dfrac{1}{8} + \boxed{}\right) = \left(\dfrac{2}{3} \times \dfrac{1}{8}\right) + \left(\dfrac{2}{3} \times \dfrac{2}{9}\right)$

II. Fill in the blank frame with the appropriate number.

13. Find the decimal equivalent of the following percent: 0.8%

14. Find the decimal equivalent of the following: $\dfrac{7}{40}$

15. Sixteen is what % of 20?

16. What is 2% of 21?

17. Twenty percent of what number is 64?

18. Write the following in its equivalent fractional form: $0.\overline{253}$

19. $\boxed{} + 0.135 = 0.24$ 20. $\boxed{} \times 1.3 = 3.12$

21. $1.3 \times .56 =$

**Answers: 1. 1/6   2. 7/12   3. 17/15 or 1 2/15   4. 34/3 or 11 1/3   5. 18
6. 711/8 or 88 7/8 7. 1/6   8. 3/4   9. 3/5   10. 8/27   11. 16/5   12. 2/9
13. 0.008   14. 0.175   15. 80% 16. 0.42   17. 320   18. 253/999 19. 0.105   20. 2.4
21. 0.728**

PRACTICE FRACTIONS, DECIMALS, PERCENTS

SKILLS TEST #2

Make each sentence or statement TRUE by filling in the blank frame <u>WITHOUT</u> the use of a CALCULATOR! Passing criterion is AT LEAST 17 correct in ONE-HALF HOUR.

I. Fill in the blank frame with the <u>SIMPLEST NAME</u> for a fraction.

1. $\dfrac{7}{12} + \boxed{} = \dfrac{17}{18}$

2. $\dfrac{11}{15} - \dfrac{3}{10} = \boxed{}$

3. $\boxed{} - \dfrac{3}{7} = \dfrac{16}{21}$

4. $\left(\dfrac{5}{6} \times \dfrac{7}{10}\right) \times 24 = \boxed{}$

5. $\boxed{} \times \dfrac{7}{18} = \dfrac{14}{3}$

6. $\left(7\dfrac{3}{5}\right) \times 6 = \boxed{}$

7. $\dfrac{3}{5} \div 6 = \boxed{}$

8. $\boxed{} \div \dfrac{6}{5} = \dfrac{3}{10}$

9. $\dfrac{2}{7} \div \boxed{} = \dfrac{1}{8}$

10. $\dfrac{2}{7} \times \left(\dfrac{12}{35} \times \boxed{}\right) = \left(\dfrac{2}{7} \times \dfrac{12}{35}\right) \times \dfrac{9}{10}$

11. $\dfrac{1}{8} = \dfrac{\boxed{}}{6}$

12. $\dfrac{4}{5} \times \left(\dfrac{2}{3} + \boxed{}\right) = \left(\dfrac{4}{5} \times \dfrac{2}{3}\right) + \left(\dfrac{4}{5} \times \dfrac{3}{8}\right)$

II. Fill in the blank frame with the appropriate number.

13. Find the decimal equivalent of the following percent: 216%

14. Find the decimal equivalent of the following: $\dfrac{11}{80}$

15. Twenty is what % of 16?

16. What is 3% of 23?

17. Eighty percent of what number is 48?

18. Write the following in its equivalent fractional form: $0.\overline{14}$

19. $\boxed{} + 0.26 = 0.385$

20. $\boxed{} \times 2.1 = 3.36$

21. $2.1 \times .32 = \boxed{}$

Answers: 1. 13/36   2. 13/30   3. 25/21 or 1 4/21   4. 14   5. 12   6. 45 3/5 or 228/5 7. 1/10   8. 9/25   9. 16/7   10. 9/10   11. 3/4   12. 3/8   13. 2.16   14. 0.1375 15. 125% 16. 0.69   17. 60   18. 14/99 19. 0.125   20. 1.6   21. 0.672

PRACTICE FRACTIONS, DECIMALS, PERCENTS

SKILLS TEST #3

Make each sentence or statement TRUE by filling in the blank frame <u>WITHOUT</u> the use of a CALCULATOR! Passing criterion is AT LEAST 17 correct in ONE-HALF HOUR.

I. Fill in the blank frame with the <u>SIMPLEST NAME</u> for a fraction.

1. $\dfrac{4}{3} + \boxed{} = \dfrac{35}{6}$

2. $\dfrac{5}{18} - \dfrac{1}{12} = \boxed{}$

3. $\boxed{} - \dfrac{9}{10} = \dfrac{11}{15}$

4. $\left(\dfrac{5}{6} \times \dfrac{3}{10}\right) \times 36 = \boxed{}$

5. $\boxed{} \times \dfrac{5}{12} = \dfrac{2}{5}$

6. $\left(5\dfrac{3}{8}\right) \times 7 = \boxed{}$

7. $\dfrac{2}{9} \div 8 = \boxed{}$

8. $\boxed{} \div \dfrac{5}{6} = \dfrac{15}{2}$

9. $\dfrac{7}{8} \div \boxed{} = \dfrac{3}{4}$

10. $\dfrac{7}{9} \times \left(\dfrac{18}{49} \times \boxed{}\right) = \left(\dfrac{7}{9} \times \dfrac{18}{49}\right) \times \dfrac{8}{15}$

11. $\dfrac{2}{7} = \dfrac{\boxed{}}{5}$

12. $\dfrac{1}{5} \times \left(\dfrac{9}{7} + \boxed{}\right) = \left(\dfrac{1}{5} \times \dfrac{9}{7}\right) + \left(\dfrac{1}{5} \times \dfrac{4}{9}\right)$

II. Fill in the blank frame with the appropriate number.

13. Find the decimal equivalent of the following percent: 0.26%

14. Find the decimal equivalent of the following: $\dfrac{6}{125}$

15. Thirty-six is what % of 120?

16. What is 8% of 21?

17. Thirty percent of what number is 33?

18. Write the following in its equivalent fractional form: $0.\overline{271}$

19. $\boxed{} + 0.462 = 0.91$

20. $\boxed{} \times 2.8 = 8.96$

21. $1.8 \times 0.23 =$

Answers: 1. 9/2 or 4 1/2   2. 7/36   3. 49/30 or 1 19/30   4. 9   5. 24/25
6. 37 5/8 or 301/8   7. 1/36   8. 25/4 or 6 1/4   9. 7/6   10. 8/15   11. 10/7 or 1 3/7
12. 4/9   13. 0.0026   14. 0.048   15. 30%   16. 1.68   17. 110   18. 271/999   19.
0.448   20. 3.2   21. 0.414

BBN: Conceptual Approach, page 592 – 594: Carefully follow the directions and

1. Draw a **REGULAR PENTAGON** using the <u>Vertex Angle</u> technique.

2. Draw a **REGULAR HEXAGON** using the <u>Inscribed Polygon in a Circle</u> technique

3. Draw a **REGULAR HEPTAGON** using either the <u>Vertex Angle</u> technique or the <u>Inscribed Polygon in a Circle</u> technique.

| **Polygon Vertex Angles** |
| Sum |
| Regular Polygons: Vertex Angles |

| **Congruence** |
| Definition |
| Examples |

| **Regular Polygons** |
| Definition |
| Examples |

| **Tessellation** |
| Definition |
| Triangles? |
| Quadrilaterals? Convex or concave? |
| Pentagons? |
| Hexagons? |

Regular Tessellations
Definition
Examples
Semi-Regular Tessellations
Definition
Examples

1. Imagine a cube made of 3 × 3 × 3 smaller cubes glued together. If you dip the large 3 × 3 × 3 cube in paint and then pull the large cube apart into 27 small cubes; how many of the small cubes will have:

    a. Paint on exactly 0 faces?   b. Paint on exactly 1 face?

    c. Paint on exactly 2 faces?   d. Paint on exactly 3 faces?

    e. Paint on 4 or more faces?

2. Imagine a cube made of 4 × 4 × 4 smaller cubes glued together. If you dip the large 4 × 4 × 4 cube in paint and then pull the large cube apart into 64 small cubes; how many of the small cubes will have:

    a. Paint on exactly 0 faces?   b. Paint on exactly 1 face?

    c. Paint on exactly 2 faces?   d. Paint on exactly 3 faces?

    e. Paint on 4 or more faces?

3. Repeat to extend this idea to any big cube made in this way. Organize your data in this table. Hint Look for general patterns in finding the cubes with 0, 1, 2, and 3 faces painted. Don't just look at the total numbers in the first three rows of the following table.

Dimensions	0 faces painted	1 face painted	2 faces painted	3 faces painted	≥ 4 faces painted
$3 \times 3 \times 3$					
$4 \times 4 \times 4$					
$5 \times 5 \times 5$					
$6 \times 6 \times 6$					
$n \times n \times n$					

Polyhedron (polyhedra)		
Definition Polyhedron **The surface of a figure whose sides are all polygonal regions.**		
Definition Polyhedron Edge **One of the edges making up the framework**	Definition Polyhedron Face **Polygonal regions forming surface**	Definition Polyhedron Vertex **The intersection of the edges of the polyhedron**
Definition Solid **The union of the polyhedron and its interior**		
Definition Convex Polyhedron **Line segment connecting any two of its points is contained inside the polyhedron or on its surface**		
Definition Concave Polyhedron **A polyhedron which is not convex.**		
Definition Regular Polyhedron 		

Platonic Solids		
Tetrahedron	**Cube (hexahedron)**	**Octahedron**
Dodecahedron	**Icosahedron**	
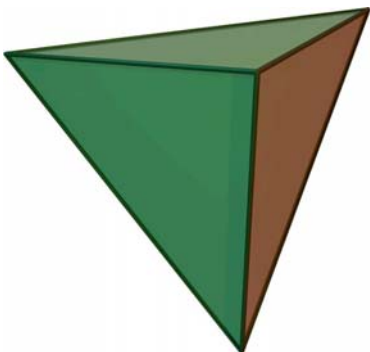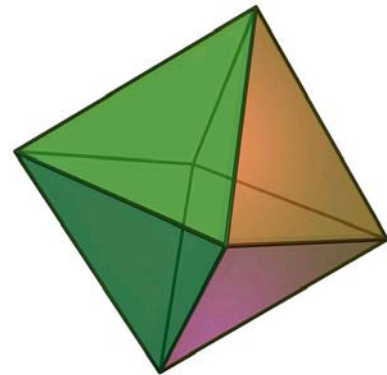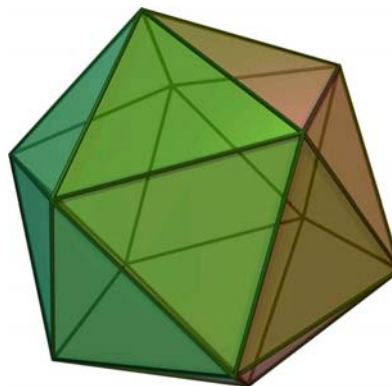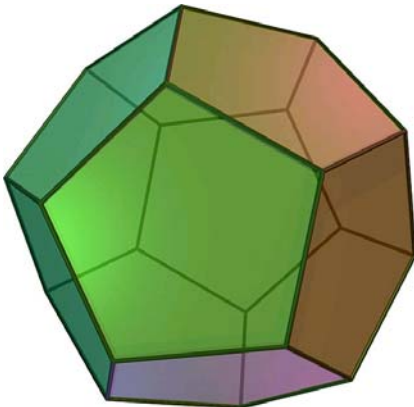
Definition Semi-Regular Polyhedron
A polyhedron whose faces are Two or more regular polygons
Pyramids and Prisms
Definition Pyramid
Examples Also see Example C in your book.
Definition Prism
Examples Also see Figure 9.51 on page 611
Cones and Cylinders
Definition Cone
Examples
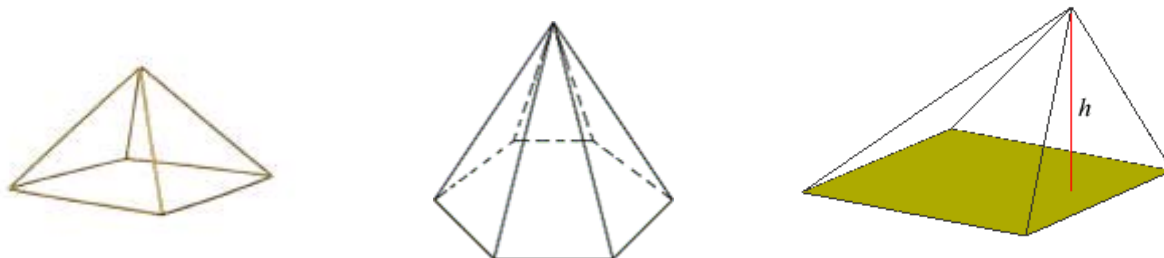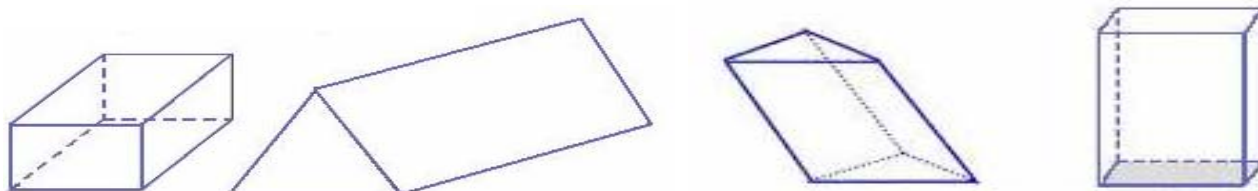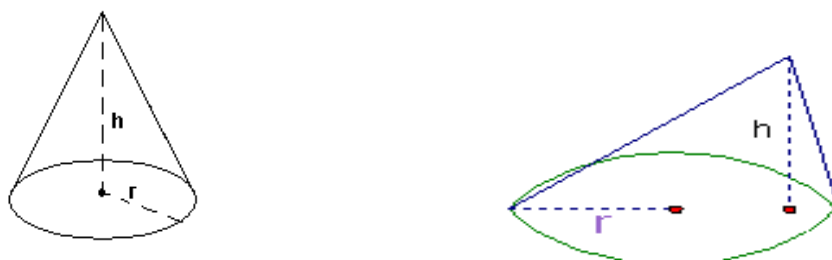
Definition Cylinder
Examples
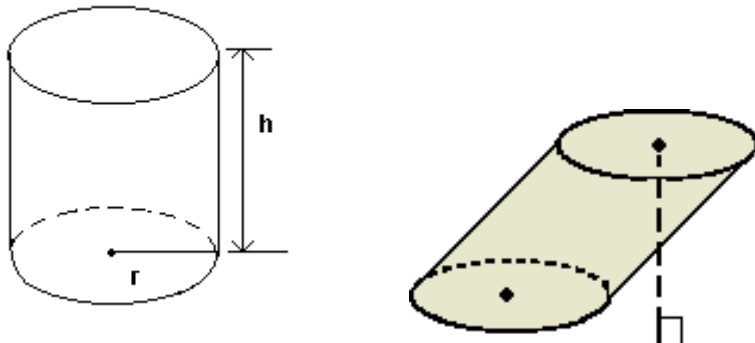
Spheres
Definition Sphere
A set if points in 3-d equidistant from a center. The radius is this distance.

Meridians of Latitude
Definition
.

Meridians of Longitude
Definition
Examples
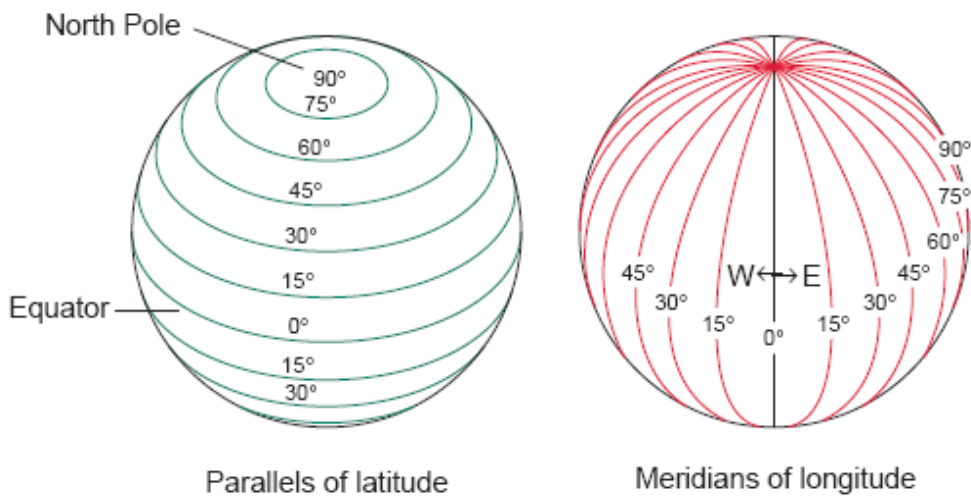
Parallels of latitude   Meridians of longitude

Problem #19

Mappings: A function that takes a geometric figure and moves, reflects, and/or rotates it to a congruent geometric figure.

Congruent Polygons:

Corresponding Sides:

Corresponding Angles:

Examples:
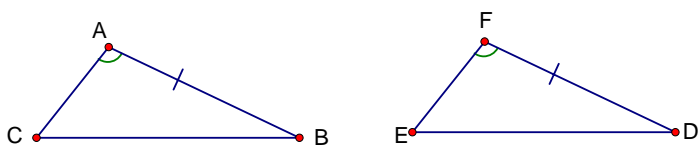
Triangle Congruence Properties

Side – Side – Side (SSS)

Examples

Side – Angle – Side (SAS)

Examples

Angle – Side – Angle (ASA)

Examples

SSA: Not a property

Examples

AAA: Not a property

Examples

Math 213, Section 10.2 Problem Solving

1. Explain how to get the area formula for a parallelogram in a way that a child would understand.

2. Explain how to get the area formula for a trapezoid in a way that a child would understand.

3. 10.2 Problem Opener

   a. Original: Each of the 10 equilateral triangles in the following figure has sides of length 1 unit, and the perimeter of the entire figure is 12 units. What will the perimeter of the figure be if it is extended to include 50 such triangles?

   b. Extension 1: Each of the 10 squares in the following figure has sides of length 1 unit, and the perimeter of the entire figure is _____ units. What will the perimeter of the figure be if it is extended to include 50 squares?
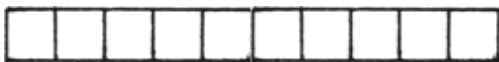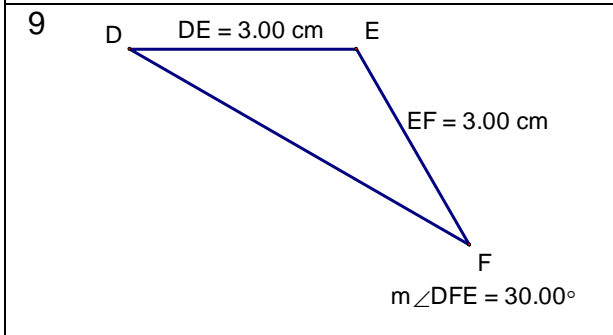

   c. Extension 2: Each of the 10 pentagons in the following figure has sides of length 1 unit, and the perimeter of the entire figure is _____ units. What will the perimeter of the figure be if it is extended to include 50 pentagons?
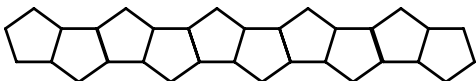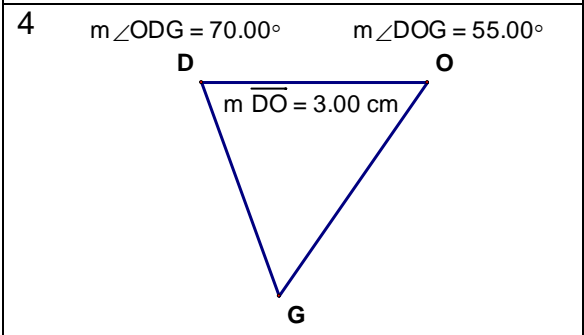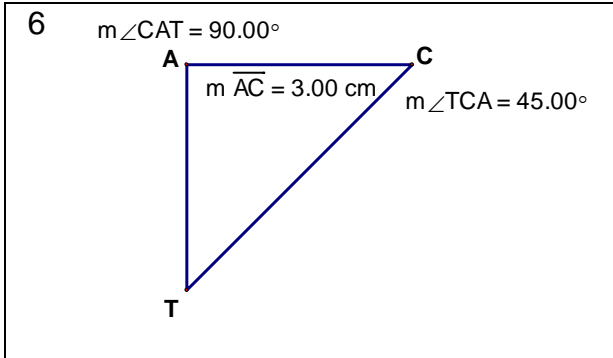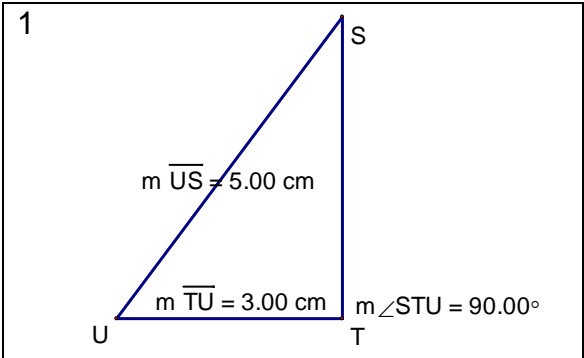

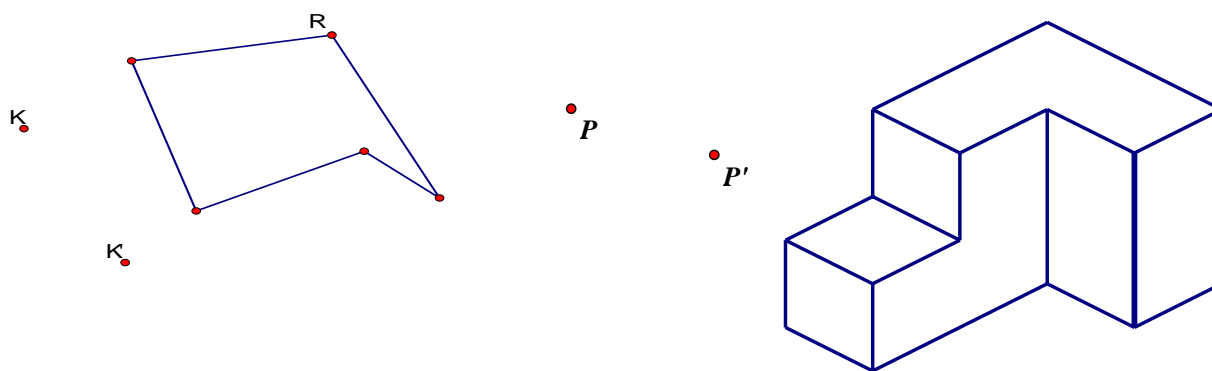4. Section 10.2 Questions #30, 32, 34 and 36.

For the ten triangles on the next page: Carefully decide which triangles are congruent. Angles that look like right angles are right angles.

a. For each congruent pair, state the congruence relationships such as $\overline{AB} \cong \overline{CD}$ or $\angle A'' A' A \cong \angle B' B'' B$.

b. For each congruent pair, explain which congruence property (SSS, SAS, ASA) determines the congruence.

1

S

m $\overline{US}$ = 5.00 cm

m $\overline{TU}$ = 3.00 cm   m∠STU = 90.00°

U   T

2   m∠ZXY = 90.00°

X   m $\overline{XY}$ = 4.00 cm

m $\overline{ZX}$ = 3.00 cm

Z

3   m∠ABC = 115.00°

A   B

BC = 3.00 cm

m $\overline{CA}$ = 5.06 cm

C

4   m∠ODG = 70.00°   m∠DOG = 55.00°

D   **O**

m $\overline{DO}$ = 3.00 cm

G

5   **P**

m $\overline{PR}$ = 3.00 cm

m $\overline{RS}$ = 3.00 cm

R   **S**

m∠PRS = 90.00°

6   m∠CAT = 90.00°

A   **C**

m $\overline{AC}$ = 3.00 cm   m∠TCA = 45.00°

T

7   m∠NML = 55.00°

M

m $\overline{LN}$ = 3.00 cm

L   **N**

m∠MNL = 70.00°

8   E

m $\overline{ED}$ = 5.06 cm

CD = 3.00 cm

C   D

m∠DCE = 115.00°

9   D   DE = 3.00 cm   E

EF = 3.00 cm

F

m∠DFE = 30.00°

10   m∠VUW = 30.00°

U

VU = 3.00 cm

WV = 3.00 cm

W   V
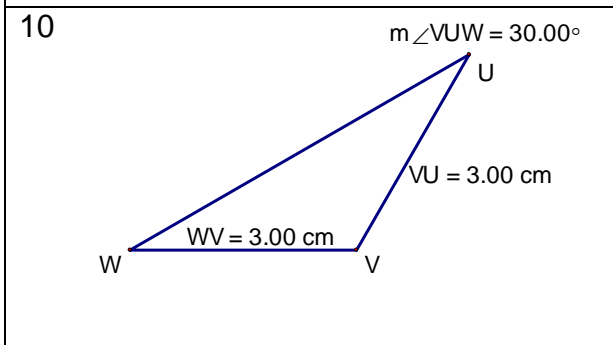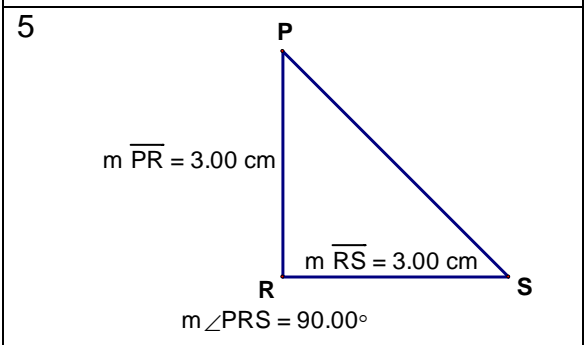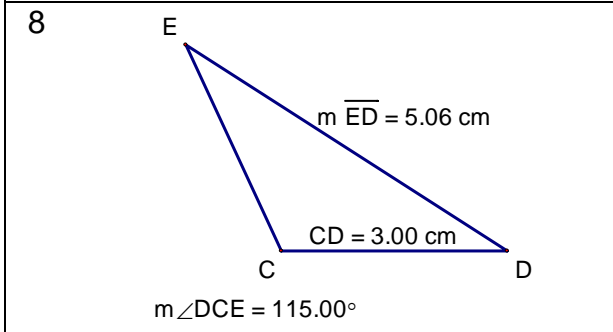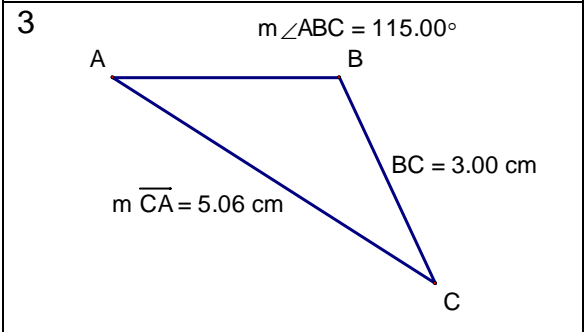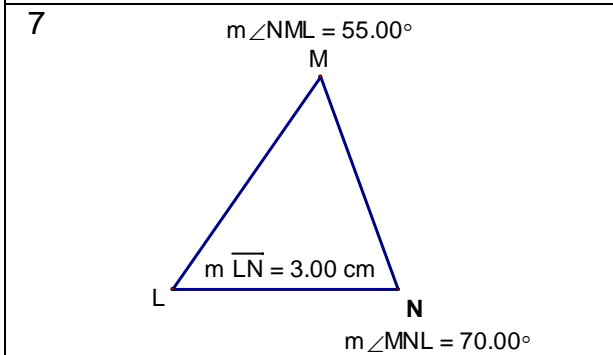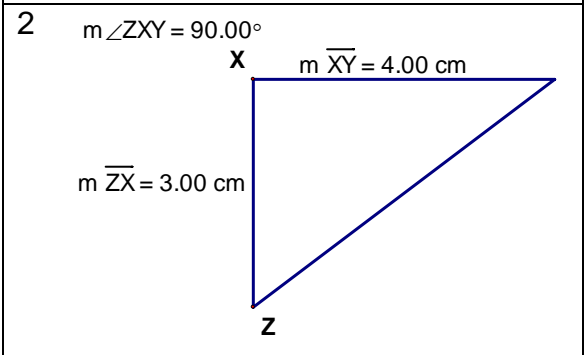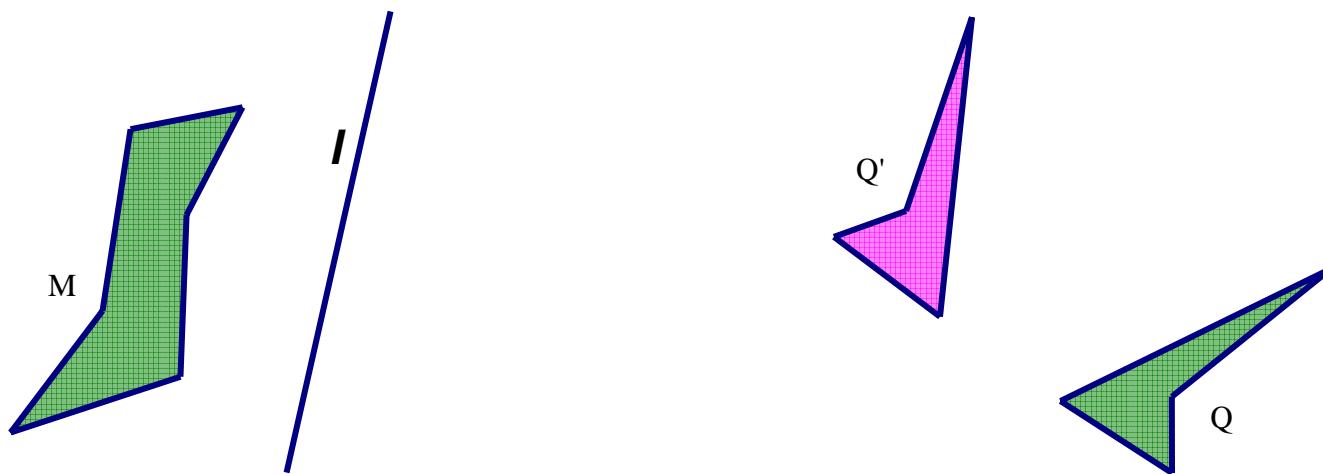
Translations

Example A

Reflections (about a line) is a mapping that can be described as folding.

Lines of Reflection: (he mirror or crease where the fold is,
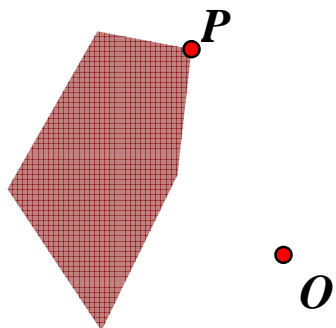
Examples:

Rotations (about a point) is a mapping that can be described as turning about a point.

Center of Rotation" The revolution point and only fixed point for the mapping.

Examples:

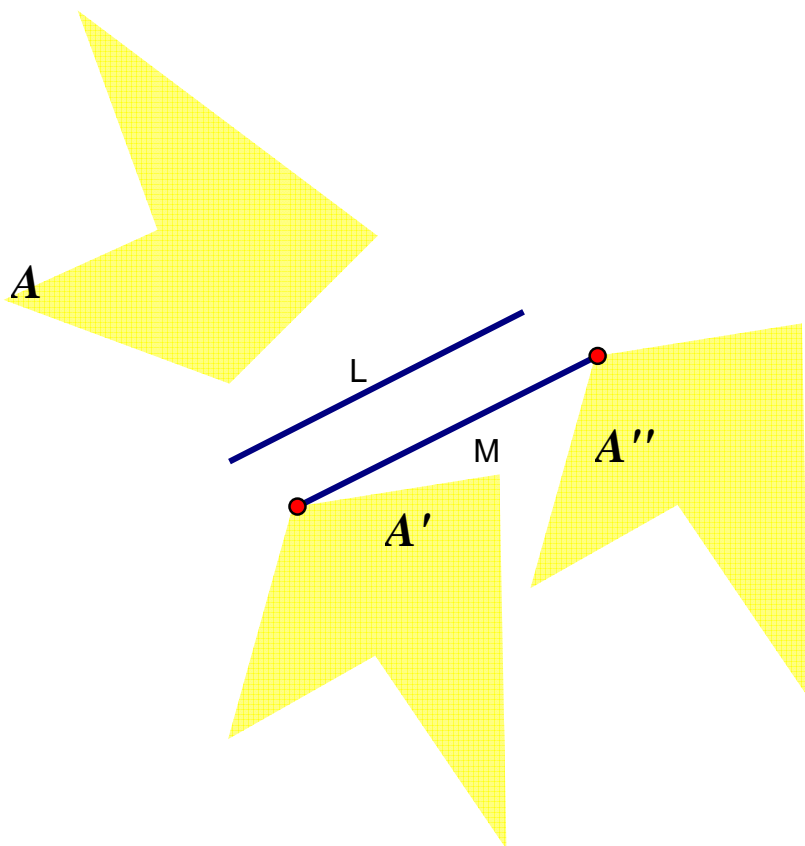Rotate the pentagon 50° clockwise about point O,

P

O

Compositions of Mappings

Glide Reflection
A *translation* followed by a *reflection* about a line that is parallel to the line of translation

Examples

A

L

M

A''

A'

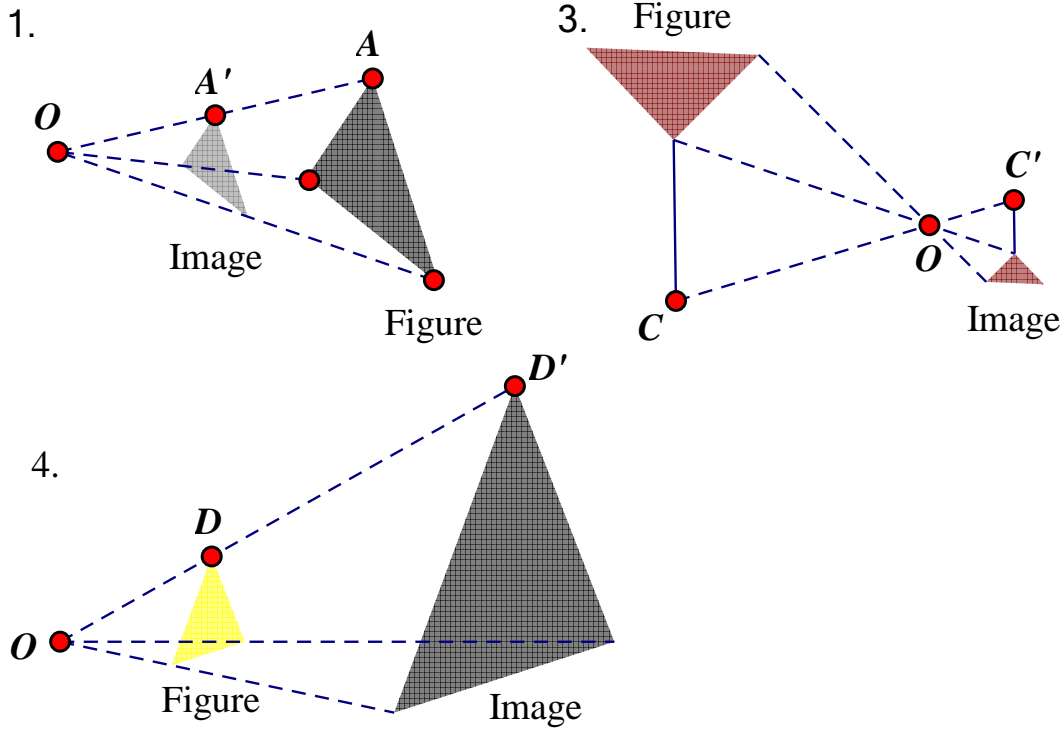**Congruent Figures**: Two geometric figures are **congruent** if and only if there exists a translation, reflection, rotation, or glide reflection of one figure onto the other.
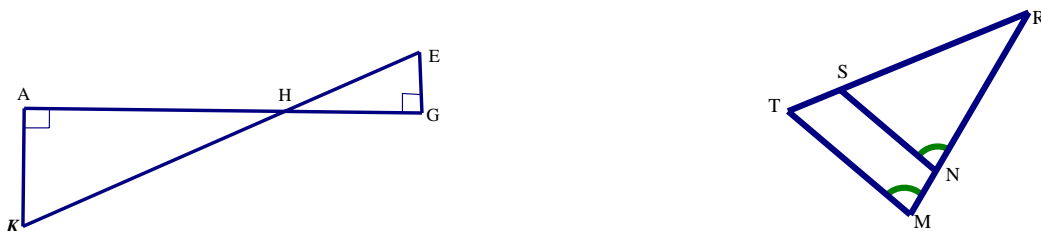
Similarity and Scale Factors

Example A

1.

3. Figure

4.

Similar Polygons

Definition:

Examples B & C
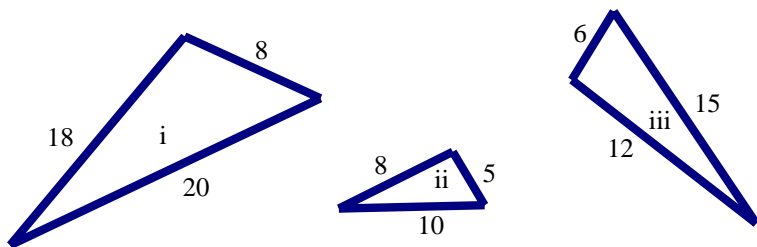
Similar Triangles

Angle-Angle Similarity Property: If TWO angles of one triangle are congruent to two angles of another triangle, then the two triangles are similar.

Example E

Side-Side-Side Similarity Property: If the corresponding sides of two triangles are proportional, then the triangles are similar.

Example G

Scale Factor: The ratio of the sides in similar figures. (New side / old side)

Example H:

1. If the scale factor from a small photograph to its enlargement is 3 and the area of the small photograph is 15 square inches, what is the area of the large photograph?

2. If the scale factor from a figure to its reduction is ½ and the figure has a surface area of 76 square feet, what is the surface area of the similar figure?

3. If the volume of a rectangular prism is 10 cubic meters and the scale factor from the box to a larger similar prism is 3, then what is the volume of the larger prism?

Examples D (Given two angles create a triangle)

Example F