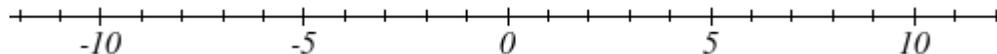


MAT082 – Final Exam Review

Note to students: The final exam for this course will consist of 30 multiple-choice questions and a few open-ended questions. You may use a calculator on the exam, but **no notes** of any kind will be permitted. The questions on this review are not to be considered identical to those found on the exam. The **FORMULAS AND TABLES** sheet (see pages 4 and 5 of this review) will be provided with the Final Exam.

- Write the word name for the number 9,501,348,012.
- Place the following numbers in order from smallest to largest: 234 430 432 324 342
- Round the number 9,501,348,012 to the nearest
 - billion
 - hundred thousand
 - million
- Cory bought 4 boxes of chocolate. There were 24 pieces of chocolate per box. How many pieces of chocolate did he buy?
- Anthony earned 76 points on his first exam and 97 points on his second exam.
 - How many more points did he earn on his second exam?
 - How many total points did he earn for both exams?
- Each apple pie requires 2 cups of sugar. If Rosanne has 12 cups of sugar, how many pies can she bake?
- Plot the numbers 3, -2, and -6 on the number line below.

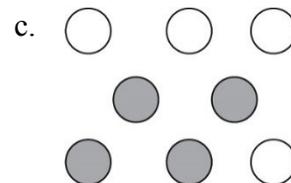
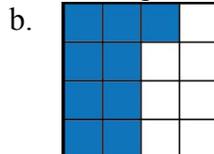
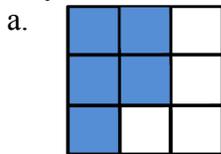


- Perform the indicated operations:
 - $-8 - 2$
 - $-8 + 2$
 - $8 - (-2)$
 - $8(-2)$
 - $(-8) \div (-2)$
 - $-81 - 25$
 - $-81 + 25$
 - $81 - (-25)$
 - $3 - (-6) + (-1) - 10 + 7$
- The temperature was -7° F at 6:00 am one day in Detroit. A cold front lowered the temperature over the next hour by 2° F.
 - What was the temperature at 7:00am?
 - If the temperature continues to drop at this rate, what will the temperature be at noon?
- Jane's monthly gross pay is \$3014.74. If she has the following deductions, what is her net pay?

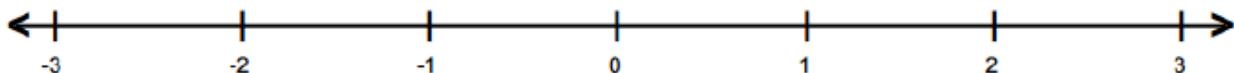
Federal Tax: \$450.69	Savings Plan: \$24.00	FICA: \$244.38
State Tax: \$112.57	Insurance: \$233.16	
- Perform the indicated operations. Show all steps and use your calculator to check your answers.
 - $5 + 3(5 - 11)$
 - $3 - 8^2$
 - $\frac{2(-5) + 4}{-3 + 6}$
 - $-4(2 - 7)^2$

12. Miguel went on a 3-day, 50-mile biking trip. The first day he biked 12 miles. The second day he biked 22 miles. How many miles did he bike on the 3rd day?
13. Jodi bought dog food for an animal rescue shelter. She bought 4 bags that weighed 25 pounds each and 8 bags that weighed 10 pounds each. How many pounds of dog food did she buy?
14. Divide 414 by 8. Give the quotient and remainder.
15. List all positive integer factors of 30.
16. Which of the following are prime numbers? 2, 5, 8, 12, 13, 21
17. Determine the prime factorization of 30.
18. Determine the GCF and LCM of 20 and 30.

19. Identify the fraction represented by the shaded part of each figure.



20. Plot the numbers $\frac{1}{3}$, $-\frac{2}{3}$, $\frac{8}{3}$, $-1\frac{2}{3}$ on the number line below.



21. Express $\frac{29}{6}$ as a mixed number.

22. Express $-1\frac{2}{3}$ as an improper fraction.

23. Reduce $\frac{12}{54}$ to lowest terms.

24. A 12 fluid ounce serving of Cherry Coke contains 140 calories. How many calories are in 60 fluid ounces of Cherry Coke?

25. For each of the following pairs, circle the **larger** number.

a. $\frac{1}{7}$ $\frac{1}{8}$

b. $\frac{5}{7}$ $\frac{7}{5}$

c. $\frac{5}{7}$ $\frac{6}{7}$

d. $\frac{4}{7}$ $\frac{1}{2}$

e. 1 $\frac{8}{9}$

f. $\frac{16}{3}$ 5

26. Perform the indicated operations. Write your answers as proper fractions, whole numbers, or mixed numbers. Reduce your answers to lowest terms.

a. $\frac{4}{33} \times \frac{3}{8}$

b. $6 \div 2\frac{1}{6}$

c. $\frac{11}{12} - \frac{1}{8}$

d. $-\frac{1}{3} + \left(-\frac{3}{5}\right)$

e. $\left(\frac{2}{3}\right)^2$

27. There are 20 people on our swim team. One fourth of the team went to a swim meet in April. How many people went to the swim meet in April? How many did not go to the swim meet?

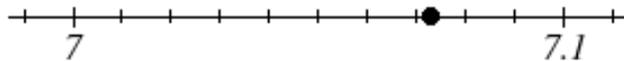
28. A stack of one hundred cards is placed next to a ruler, and the height of stack is measured to be $\frac{5}{8}$ inches. How thick is one card? Write your answer as a reduced fraction.

29. Linda made a triple batch of sugar cookies. She used $5\frac{1}{8}$ cups of flour. Before she made her cookies she had $8\frac{2}{3}$ cups of flour. How much flour does Linda have left?

30. Write the word name for the number 11.015.

31. Place the following numbers in order from smallest to largest: 2.34, 2.304, 2.043, 2.403

32. Round the number represented below to the nearest whole number, tenth, and hundredth.



33. Crystal is buying Halloween candy at the store. She has \$20 and wants to buy as many bags of candy as possible. She computes that she has enough to buy 4.87 bags of candy. How many bags of candy can she buy?

34. Write the decimal approximations for the given numbers as place value numbers.

a. Mount Kilimanjaro is approximately 19.3 thousand feet.

b. A dollar bill is approximately 1.1 hundredths of a centimeter thick.

35. Round \$8,513.4812 to the nearest

a. whole number

b. thousandth

c. hundred

d. thousand

e. hundredth

f. tenth

g. dollar

h. cent

36. Write 0.032 as a fraction in simplest form.

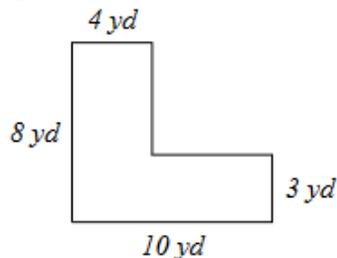
37. Write $5\frac{2}{3}$ in decimal form. Round to the nearest thousandth as needed.

38. Write 0.032 as a percent.

39. Write $\frac{5}{16}$ as a percent.

40. Write 28% as a fraction in simplest form

41. Find 12% of \$213.58. Round to the nearest cent.
42. What percent of 30 is 45?
43. 40 is 25% of what number?
44. A coat regularly selling for \$46.85 is advertised at 35% off. Find the sale price of the coat.
45. The sales tax rate in a certain state is 9.8%. Find the total amount paid for a pair of shoes that costs \$48. Round your answer to the nearest cent.
46. Two stores carry your favorite shampoo, but at different prices.
Store A: \$6.76 for 15 fluid ounces Store B: 12 fluid ounces for \$5.18
 Compute the unit rates for each store and determine which store has the better deal.
47. Add 3 ft. 7 in. and 8 ft. 9 in. Write your answer in feet and inches.
48. Perform the following conversions. Round to the nearest tenth as needed.
 a. Convert 41 months to years. b. Convert 41 months to years and months.
49. Convert 145 pounds to kilograms. (1 kg = 2.205 lb) Round your answer to the nearest tenth.
50. Convert 2.3 meters to centimeters.
51. Convert 2,356 millimeters to meters.
52. A rectangle is 3.35 inches long and 7.3 inches wide. Find its area and perimeter. Include correct units in your answers.
53. Find the circumference and area of a circle with radius 5 feet. Use $\pi = 3.14$. Include correct units in your answers.
54. Find the perimeter and area of the figure shown below. Include correct units in your answers.



55. Use the formula $V = \frac{4}{3}\pi r^3$ to find the volume of a sphere with a radius of 3 inches. Use 3.14 for π .
 Include correct units in your answer.

MAT082 - Formulas and Tables

Perimeter:

Rectangle:	$P = 2W + 2L$
Square:	$P = 4s$
Triangle:	$P = a + b + c$
Circle:	$C = 2\pi r$ or πd , (circumference)

Area:

Rectangle:	$A = LW$
Square:	$A = s^2$
Parallelogram:	$A = bh$
Circle:	$A = \pi r^2$
Triangle:	$A = \frac{1}{2}bh$
Trapezoid:	$A = \frac{1}{2}(b_1 + b_2)h$

Volume:

Rectangular Prism: (box)	$V = LWH$
Cube:	$V = s^3$
Cylinder: (can)	$V = \pi r^2 h$
Pyramid:	$V = \frac{1}{3}LWH$
Cone:	$V = \frac{1}{3}\pi r^2 h$
Sphere:	$V = \frac{4}{3}\pi r^3$

Pythagorean Theorem: $a^2 + b^2 = c^2$ where c is the hypotenuse and a and b are legs

$$c = \sqrt{a^2 + b^2}, \quad a = \sqrt{c^2 - b^2}$$

Temperature: Centigrade and Fahrenheit equivalents

$$C = \frac{5}{9}(F - 32) \quad F = \frac{9}{5}C + 32$$

US Customary Units/Conversions		
Length	Mass/Weight	Area
Units: <ul style="list-style-type: none"> Inches (in) Feet (ft) Yards (yd) Miles (mi) Conversions: <ul style="list-style-type: none"> 1 ft = 12 in 1 yd = 3ft 1 mi = 5280 ft 	Units: <ul style="list-style-type: none"> Ounces (oz) Pounds (lb) Tons Conversions: <ul style="list-style-type: none"> 1 lb = 16 oz 1 ton = 2000 lb 	Units: <ul style="list-style-type: none"> Square Inches (in²) Square Feet (ft²) Square Yards (yd²) Conversions: <ul style="list-style-type: none"> 144 in² = 1 ft² 9 ft² = 1 yd²
Volume		Time
Units: <ul style="list-style-type: none"> Ounces (oz) Cup (c) Pint (pt) Quart (qt) Gallon (gal) Cubic Feet (ft³) Cubic Yard (yd³) Conversions: <ul style="list-style-type: none"> 1c = 8 oz 1pt = 2c 1 qt = 2pt 1 gal = 4 qt 1728 cubic in = 1 cubic ft 27 cubic ft = 1 cubic yd 	Units: <ul style="list-style-type: none"> Seconds (sec) Minutes (min) Hours (hr) Days Weeks (wk) Months (mo) Years (yr) Conversions: <ul style="list-style-type: none"> 1 min = 60 sec 1 hr = 60 min 1 day = 24 hr 1 wk = 7 day 1 yr = 52 wk 1 yr = 12 mo 1 yr = 365 days 	

Metric Chart						
1000 x Base	100 x Base	10 x Base	Base Unit	.10 x Base	.01 x Base	.001 x Base
Kilometer	Hectometer	Dekameter	Meter	Decimeter	Centimeter	Millimeter
Kiloliter	Hectoliter	Dekaliter	Liter	Deciliter	Centiliter	Milliliter
Kilogram	Hectogram	Dekagram	Gram	Decigram	Centigram	Milligram

Some Common Metric Conversions
1 centimeter (cm) = 10 millimeters (mm) 1 meter (m) = 100 centimeters (cm) 1 kilometer (km) = 1000 meters (m)

Some Common Metric/U.S. Conversions			
Length	Mass/Weight	Area	Volume
1 mi = 1.61 km 1 yd = 0.9 m 1 in = 2.54 cm	1 kg = 2.2 lb 1 g = 0.04 oz 1 metric ton = 1.1 ton	1 in ² = 6.45 cm ² 1 yd ² = 0.84 m ² 1 mi ² = 2.59 km ²	1 L = 1.1 qt 1 gal = 3.8 L 1 L = 2.1 pt
.621 mi = 1 km 1.094 yd = 1m .394 in = 1cm	.454 kg = 1lb 1 oz = 28.3 g		1 yd ³ = 0.76 m ³ 1 in ³ = 16.4 cm ³