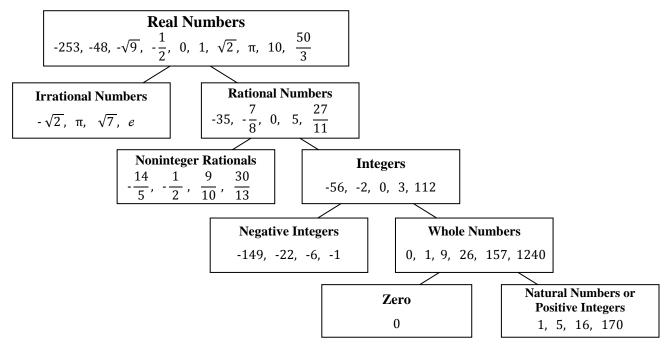
MAT 011 - Review Practice A

Name _

Text Sections 1.2, 1.3, 1.5, 1.6 & 1.7

Common Sets of Numbers: The following diagram summarizes the relationships among the different sets of real numbers. Examples for each type of number are listed in the boxes below for you to review. For further explanation please see *Section 1.2* (pgs. 9 - 12) in the Multimedia Textbook.



Brief Review of Signed Number Operations: Read through the following information to review the rules for adding, subtracting, multiplying and dividing positive and negative numbers. Fill in the missing values in the blanks provided for the *You Try It Problems*.

Adding Signed Numbers

1. If the two numbers have the SAME sign, then ADD the numbers together. The sign of the answer will be the SAME sign as the original numbers.

Example Problems	You Try It Problems				
1. $4 + 7 = 11$	a. 8 + 15 =				
2. $-10 + (-20) = -30$	b7 + (-2) =				
3. $\frac{1}{8} + \frac{5}{8} = \frac{6}{8} = \frac{3}{4}$ Since these fractions already have a common denominator of 8, just add the numerators. Reduce the fraction by	c. $\frac{6}{5} + \frac{9}{5} = $				
dividing both the numerator and denominator by 2. 4. $39 + 9 = 48$	d. $\frac{-3}{14} + \frac{-5}{14} = $				
5. $\frac{-2}{5} + \frac{-3}{5} = \frac{-5}{5} = -1$ Since these fractions have a common denominator of 5, add the numerators and reduce the final fraction if possible.	e. $-9 + (-11) =$				

Check your answers at the bottom of pg. 3.

2. If the two numbers have DIFFERENT signs, then SUBTRACT the numbers. Give the answer the same sign as the number with the largest absolute value (commonly referred to as "the sign of the larger number").

Example Problems	You Try It Problems				
1. $-9 + 6 = -3$	f. $2 + (-12) =$				
2. $13 + (-13) = 0$					
3. $\frac{-2}{3} + \frac{10}{3} = \frac{8}{3}$	g11 + 11 =				
Since these fractions have a common denominator of 3, add the numerators and leave the answer as a reduced improper fraction. Do NOT type $2\frac{2}{3}$ as it may be marked incorrect if entered into MyMathLab as a mixed number.	h. $\frac{-17}{9} + \frac{2}{9} = $				
4. $6 + (-12) = -6$ 5. $\frac{-5}{7} + \frac{1}{2} = \left(\frac{-5 \cdot 2}{7 \cdot 2} + \frac{1 \cdot 7}{2 \cdot 7}\right) = \frac{-10}{14} + \frac{7}{14} = \frac{-3}{14}$	i. 14 + (-19) =				
Since these fractions have different denominators, first find a common denominator. Since 14 is the smallest number that both 7 and 2 divide into evenly, 14 is the least common denominator. Change the fractions into equivalent fractions with denominators of 14 and then add or subtract as indicated. Write the answer as a reduced fraction.	j. $\frac{-2}{3} + \frac{3}{5} = $				

Subtracting Signed Numbers: To find the difference of two numbers, re-write the problem by adding the first number to the opposite sign of the second number. If *a* and *b* are real numbers, then a - b = a + (-b). Then follow the steps for *Adding Signed Numbers*.

You Try It Problems
k. $7 - 18 = $
11-50 =
m. $\frac{5}{6} - \left(\frac{-7}{6}\right) = $
n. $-4 - (-16) =$
0. $\frac{8}{9} - \frac{2}{3} = $

NOTE: You can apply the rules for adding and subtracting signed numbers to problems with more than 2 terms. Simplify from left to right:

$$-9 + 16 - 10 = -9 + 16 + (-10)$$

7 + (-10) = -3

Multiplying & Dividing Signed Numbers

1. If the two numbers have the SAME sign, then the product or quotient is POSITIVE.

Example Problems	You Try It Problems				
1. $2 \cdot 6 = 12$	p. 15 · 3 =				
2. $(-11)(-5) = 55$	q. $(-7)(-9) =$				
3. $\frac{18}{2} = 9$	r. $\frac{-48}{-3}$ =				
4. $\frac{-2}{5} \cdot \frac{-10}{3} = \frac{-2}{1^5} \cdot \frac{-10}{3} = \frac{4}{3}$	s. $\frac{1}{4} \cdot \frac{12}{5} = $				
A least common denominator is not needed for multiplying or dividing fractions; just multiply the numerators and multiply the denominators. You can cancel any common factors before multiplying. Reduce the answer if possible.	t. $\frac{-3}{8} \cdot (-24) =$				

2. If the two numbers have DIFFERENT signs, then product or quotient is NEGATIVE.

Example Problems	You Try It Problems			
1. $-9 \cdot 4 = -36$	u7 · 3 =			
2. $(8)(-10) = -80$	v. $(-12)(2) = $			
3. $\frac{-14}{2} = -7$	W. $\frac{36}{-9} = $			
4. $\frac{-5}{7} \div \frac{2}{3} = \frac{-5}{7} \cdot \frac{3}{2} = \frac{-15}{14}$	X. $\frac{-3}{7} \div \frac{5}{14} = $			
To divide two fractions, multiply the first fraction by the reciprocal of the second fraction. You can cancel any common factors before multiplying. Reduce if possible.	y. $\frac{4}{9} \cdot \frac{-3}{2} = $			

Multiplying & Dividing by 0

a)	a) Zero multiplied by any number = zero. $0 \cdot 7 =$							$= 0 \qquad -9 \cdot 0 = 0$			
b)) Zero divided by any number $=$ zero.					$\frac{0}{-21}$	$\frac{0}{-21} = 0 \qquad \frac{0}{7}$			= 0	
c)	c) Any number divided by zero is undefined. $\frac{15}{0}$ = undefined $\frac{-21}{0}$ = undefined								ined		
	Key for You Try It Problems pgs. 1 – 3.										
	a. 23	b. – 9	c. 3	d. - 4/7	e. – 20	f. – 10	g. 0	h. – 5/3	i. – 5		
	j. –1/15	k. – 11	l. – 51	m. 2	n. 12	o. 2/9	p. 45	q. 63	r. 16		
	s. 3/5	t. 9	u. – 21	v. – 24	w. – 4	x 6/5	y 2/3			1	
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