

Review of Math 9 – Part 1

Operations with integers and fractions

Integers

Whole numbers that are positive and negative

Order of operations

- Brackets
- Exponents
- Multiplication and division in the order they occur
- Addition and subtraction in the order they occur

_____ is the result of addition

_____ is the result of subtraction

_____ is the result of multiplication

_____ is the result of division

Example 1: Without a calculator, evaluate. Show your work if necessary.

a) $(-1) + 3$

b) $4 - (-5)$

c) $4 - 7$

d) $(-1) \times 3$

e) $(-4) \times (-5)$

f) $4 \times (-7)$

g) $(-1) \times 3 - 5$

h) $4^2 + (-5)$

i) $2(4 - 7)$

Operations with fractions

1) Addition and subtraction of fractions

- Find a common denominator
- For each fraction, multiply the numerator and denominator (top and bottom) by the same number
- Add or subtract the numerators (tops)

2) Multiplication of fractions

- Multiply the numerators together
- Multiply the denominators together

3) Division of fractions

- Rewrite in the form of multiplication
 - Multiply the reciprocal of the second fraction

Simplifying fractions

A fraction is in simplest form when the numerator and the denominator are as small as possible. To reduce a fraction to simplest form divide the numerator and denominator by the same number.

Example 2: Evaluate and simplify if necessary.

a) $\frac{1}{5} + \frac{3}{5}$

b) $\frac{1}{5} + \frac{4}{3}$

c) $\frac{7}{3} - \frac{5}{6}$

d) $\frac{2}{5} \times \frac{3}{8}$

e) $\frac{1}{2} \div \frac{3}{4}$

f) $\frac{2}{7} \times 4$

Operations with integers and fractions – Review #1

Name: _____

1. Evaluate without a calculator.

a) $(-1)+(-2)$

b) $(-2)-7$

c) $6-(-6)$

d) $(-2)+2$

e) $(-8)+7$

f) $7-(-2)$

g) $1-(-6)$

h) $(-1)-6$

i) $(-3)+(-7)$

j) $(-4)-(-2)$

k) $(-4)+(-6)$

l) $5-2$

m) $(-5)+(-2)$

n) $(-7)+2$

o) $5+(-2)$

p) $2-(-6)$

q) $(-6)+2$

r) $4-6$

s) $7+(-6)$

t) $3-2$

u) $(-1)+(-7)$

v) $(-6)+(-6)$

w) $(-3)+2$

x) $2-7$

y) $6-(-5)$

z) $2+(-1)$

aa) $(-3)-(-2)$

bb) $(-5)-2$

cc) $(-7)-(-6)$

dd) $(-5)-2$

ee) $1-(-7)$

ff) $(-5)+7$

gg) $4-(-2)$

2. Evaluate without a calculator. Show your work

a) $20 \div 5 + 3$

b) $15 - 4 \times 2$

c) $4 \times 7 - 10$

d) $(7 - 5) \times 3$

e) $12 \div (4 - 1)$

f) $4 \times (10 - 7)$

g) $8 \times 7 - 4 \times 3$

h) $15 - (3 + 2) \times 3$

i) $(2 - 3) \times 8 + 9$

j) $10^2 - 25$

k) $12 + 5^2 - 36$

l) $2^3 + 5 \times 4$

m) $6^2 + 5 - 3^2$

n) $4^2 \times 2 - 15$

o) $2^2 \times (13 - 5)$

p) $8 - 2^3$

q) $(8 - 2)^3$

r) $(9 - 2)^2 + 2$

s) $14 - 36 \div 2^2$

t) $3 \times (5^2 - 4^2)$

u) $3^2 \times (8 + 1) \div 3$

3. Evaluate each expression. Simplify if necessary.

a) $\frac{7}{4} \times \frac{1}{3}$

b) $2 \times \frac{1}{2}$

c) $\frac{4}{3} \times \frac{2}{3}$

d) $\frac{1}{5} \times \frac{4}{3}$

e) $\frac{5}{6} \times \frac{3}{4}$

f) $\frac{3}{4} \times \frac{1}{6}$

g) $\frac{8}{5} \div \frac{4}{5}$

h) $\frac{1}{2} \times 8$

i) $\frac{5}{6} \div \frac{1}{4}$

j) $\frac{3}{2} \div \frac{3}{4}$

k) $\frac{7}{9} \times \frac{5}{7}$

l) $\frac{2}{3} \div \frac{3}{8}$

m) $\frac{2}{3} \div 4$

n) $\frac{7}{8} - \frac{3}{8}$

o) $\frac{2}{3} - \frac{1}{6}$

p) $\frac{3}{2} + \frac{5}{4}$

q) $\frac{4}{5} - \frac{1}{4}$

r) $\frac{1}{2} + \frac{9}{5}$

s) $\frac{4}{5} + \frac{5}{4}$

t) $\frac{2}{3} + \frac{2}{5}$

u) $3 - \frac{1}{3}$

v) $2 - \frac{6}{5}$

w) $\frac{1}{6} + \frac{5}{6}$

x) $\frac{1}{4} + \frac{1}{2}$