King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 001 – Review - Term 131

Reading Mathematical Expressions & Arithmetic Operations

Expression	Reads	Note
$x \in A$	x belongs to A, x is in A	
$A \subset B$	A is a subset of B	
$\varnothing$	The empty set	
$A \cup B$	A union B	
$A \cap B$	A intersection B	
A'	The complement of A	
$a + b = c$	a plus b is c	Addition; c is the sum
$a - b = c$	a minus b equals c	Subtraction; c is the difference
$a \cdot b = c$	a times b is equal to c	Multiplication; c is the product
$a \div b = c$	a divided by b equals c	Division; c is the quotient
$\frac{a}{b}, \frac{a}{b}$	a over b	Fraction a : numerator b: denominator
$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	one half, one third, one fourth	(Reciprocals of 2, 3 and 4)
$\frac{5}{2}, \frac{2}{3}, \frac{7}{10}$	five halves, two thirds , seven tenths	
a^b	a to the b, a to the b^{th} power	*a: base,* *b:* exponent
a^2, a^3, a^{-1}	a squared, a cubed, a inverse	
$\sqrt[n]{a}$	nth root of a	nth radical, *a*- radicand, n- index
$\sqrt{a}, \sqrt[3]{a}$	Square root of a , cube root of a	
$a < b$	*a* is less than *b*	Inequalities
$a \leq b$	*a* is less than or equal to *b*	
$a > b$	*a* is greater than *b*	
$a \geq b$	*a* is greater than or equal to *b*	

Question1: Given: $x=\frac{1}{9}$, $y=-5$ and $w=-\frac{5}{7}$. Find:

$\frac{x}{y}=-\frac{1}{45}$	$2x^2=\frac{2}{81}$	$(2x)^2=\frac{4}{81}$
$x-y=\frac{46}{9}$	$x+y=-\frac{44}{9}$	$\frac{y}{x}=-45$
$y+\frac{x}{w}=-\frac{232}{45}$	$w-x\cdot y=-\frac{10}{63}$	$\frac{2x-2}{2w}=\frac{56}{45}$
$\frac{2x-3y}{2w}=-\frac{959}{90}$	$2w-3(y-2x)=\frac{299}{21}$	$7\frac{1}{5}-4\frac{1}{8}\div 1\frac{1}{4}=\frac{39}{10}$

Question 2: Find:

(a): $1.32+0.132=1.452$	**(e):** $26.06\div 25=1.0424$
(b): $1.05-100.3=-99.25$	**(f):** $1.5\div 0.15=10$
(c): $(0.2)^2-(0.07)^2=0.0351$	**(g):** $12\div 1.44=\frac{25}{3}$
(d): $3-(0.12)^2=2.9856$	**(e):** $\frac{1.2\times 1.04}{0.06}=20.8$

Question 3: Answer the following:

1. Which is larger π or $\frac{22}{7}$? Why? $(\pi\approx 3.14159)$

Answer: $\frac{22}{7}$ **because** $\frac{22}{7}=3.\overline{142857}$

2. Which is smaller $\frac{8}{11}$ or $\frac{7}{9}$? Why?

Answer: $\frac{8}{11}$ **because** $\frac{8}{11}=\frac{8(9)}{11(9)}=\frac{72}{99}$ and $\frac{7}{9}=\frac{7(11)}{9(11)}=\frac{77}{99}$

3. Calculate and give the remainder of $2606\div 25$.

Answer: $2606\div 25=104.24$ remainder: 0

4. Express $\frac{115}{40}$ and $\frac{147}{28}$ as a decimal numbers.

Answer: $\frac{115}{40}=2.875$ and $\frac{147}{28}=5.25$

5. Express 0.62 as a fraction in its lowest terms.

Answer: $0.62=\frac{31}{50}$ **because** $0.62=\frac{0.62}{1}=\frac{62}{100}=\frac{2(31)}{2(50)}=\frac{31}{50}$

6. Find reciprocal of the mixed number $-2\frac{3}{5}$

Answer: $-\frac{5}{13}$ **because** $-2\frac{3}{5}=-\left(2\frac{3}{5}\right)=-\left(2+\frac{3}{5}\right)=-\frac{13}{5}$

7. Find **(a):** $\sqrt{1521}$ **(b):** $\sqrt{30.25}$ **(c):** $\sqrt{0.25-0.16}$

Answer: (a): 39 **(b):** 5.5 **(c):** 0.3