

# Math 9

The Knowing/Doing needed for each quiz question and the Common Errors demonstrated by students (created by teachers in the Southwest/South Central group)

N1

- base recognition
  - exponent represents repeated multiplication of base
  - relationship between base and brackets
  - proper use of calculator.

$$\#1 \quad (-5)^6$$

Common Errors

- multiply base by exponent  $-5 \times 6$
- ignoring negative  $5 \times 6 = 30 \Rightarrow -30$   
 $5^6 = 15625$
- improper use of calculator  $-5^6 = 5^6 = -15625$

2. K/D

- represent a negative base in a power  $\Rightarrow$  brackets
- base made up of ~~the~~ product  $\Rightarrow 2m$   
 $\#2 \quad (-2m \cdot -2m \cdot -2m \cdot -2m)$
- not putting negative in brackets  
 $-2m^4 \Rightarrow 2m \cdot 2m \cdot 2m \cdot 2m$

# #3 N2 EXPONENT LAWS

## KNOWING / DOING

$$\frac{(3^2)^5 \cdot (3)^3}{(3)^6}$$

Language: 'BASE' / 'EXPONENT' / SIMPLIFY

- the THREE EXPONENT LAWS & EXECUTION
- ORDER OF OPERATIONS
- DON'T CHANGE THE BASE.  $(3^2) = 9$   
↳ KEEP THE BASES CONSISTENT

## Common Errors

- Added all exponents
- Added exponents when dividing
- change the order of the question
- order of operations
- "Power of a Power Law" \*
- were able to execute 2 of the 3 laws... giving an erroneous answer.
- changed exponents values to a numerical value

<u>K</u>	<u>B</u>
2-A	10-C
1-C	2-D
3-D	

N3

Question #4

## Knowing / Doing

- Increasing / Ascending (Vocab)
- Integers
- Moving between forms
- Putting back to original form.
- Place value
- Repeating / Terminating
- Rounding / estimation

## Common Errors

- Reverse order (esp. negative #'s)
- Ordered fractions according to value of Denominator

# Math 9

N4. → #5

$$-\frac{2}{3} + \frac{1}{2} \times \frac{1}{4}$$

Know

- bedmas
- multiply fractions
- integers
- add fractions

Do

- multiply first
- multiply top × top etc.
- add - and +
- common denominator
- only add numerator (keep den. same)
- process of adding fractions

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adding first

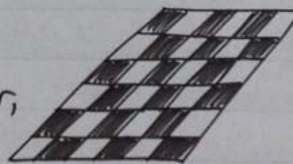
- Σ - incorrectly applied BEDMAS
- ⊖ - did numerator separate from denominator

- convert to ~~fra~~ decimal, added first

- adding integers  $(-16 + 3 = -19)$

- straight across, no LCD

$\left( \begin{array}{l} 2+1 \times 1 \\ 3 \times 1 \\ 3 \end{array} \right)$  for numerator,  
same for denominator



PR3 #6

Knowing/Doing

$$-4x + 5 = 2x - \frac{1}{3}$$

- balance equations  
 $ax + b = cx + d$
- move variables to one side of equation
- combining integers (add/subtract)
- Combining like terms
- adding fractions
- dividing fractions
- multiplying by the L.C.D.

Common Errors

- combining integers
- converting to decimals instead of working with fractions
- problems isolating variable  
 "+4" or "÷2"  
 (instead of +4x) (instead of -2x)
- no work - just a guess  
(don't understand balancing equations)
- guess and check.

## Math 9

PR 3 #7

Two times the sum of a number and three is 10. Write the equation.

Knowing/Doing

- Use Distributive Property
- Knowledge of Language "Two Times"  
"Sum"

Common Errors

- Distributive Property  $2(x+3)=10$

#8

### Knowing/Doing

### COMMON ERRORS

- math vocabulary
  - \* Simplify
  - \* Variable
  - \* constant
  - \* co-efficient
- negative in front of brackets
- understand like terms
- integers *- adding the inverse*
- gather like terms
- Distributive property

- Change the signs <sup>in</sup> brackets after the negative

- only changed 1<sup>st</sup> term in the bracket.

- Combined ~~the~~ unlike terms ( $a^2 - 3a$ )

# PR 7 (x)(÷) Polynomials

## Need to Know + Do

- vocab - polynomial, monomial, binomial, tri-n.
- Like Terms, unlike terms
- Law of Exponents
- (x)(÷) of Numbers (coefficients)
- distributive property
- multiply + divide Integers

## Common Errors

- Law of Exponents (multiplying instead of adding or vice versa)
- not distributing completely or correctly
- multiplying or dividing Integers incorrectly.
- subtracting or adding instead of distributing
- factoring
- problem solving skills