

SMTH 121A Practice Test 2  
(Kime text)

On the actual test, remember to write in complete sentences on your scratch paper and turn it in with your test for partial credit consideration.

1. Express as a power of 10:

(a)  $0.000001 =$  \_\_\_\_\_ (b)  $10,000,000,000 =$  \_\_\_\_\_

2. Rewrite in scientific notation:

(a)  $.0000273 =$  \_\_\_\_\_ (b)  $43,800,000, =$  \_\_\_\_\_

3. Rewrite in standard notation:

(a)  $-2.63 \cdot 10^6 =$  \_\_\_\_\_ (b)  $1.24 \cdot 10^{-5} =$  \_\_\_\_\_

4. Simplify the following, removing all possible radicals and expressing all variables and coefficients with the lowest possible positive integer exponents.

(a)  $(-2x^4)^3 =$  \_\_\_\_\_ (b)  $(-5x^3)^2 =$  \_\_\_\_\_

(c)  $\left(\frac{-2x^2}{3yx^{-2}}\right)^2 =$  \_\_\_\_\_ (d)  $\left(\frac{12xy^2}{3x}\right)^{-2} =$  \_\_\_\_\_

(e)  $\frac{7^{-4}x^{-1}y^2}{7^{-5}xy^3} =$  \_\_\_\_\_ (f)  $x^{-2}(x^5 + x^{-6}) =$  \_\_\_\_\_

(g)  $\sqrt{\frac{9y^2}{25x^4}} =$  \_\_\_\_\_ (h)  $\sqrt[3]{\frac{8x^5}{27y^6}} =$  \_\_\_\_\_

(i)  $\left(\frac{1}{64}\right)^{1/2} =$  \_\_\_\_\_ (j)  $\sqrt{4a^2b^6} =$  \_\_\_\_\_

$$(k) \sqrt[3]{8 \cdot 10^{-9}} = \underline{\hspace{2cm}}$$

$$(l) \left(\frac{43xyz^7}{12.5wzx}\right)^0 = \underline{\hspace{2cm}}$$

5. Use the conversion factors **2.54 centimeters = 1 inch** and **1 quart = .946 liters** to compute the following. Show your work on your scratch paper.

(a) 1 m. =                      ft.

(b) 1 gal. =                      liters

(c) 1 sq ft =                      sq cm

(d) 2 liters =                      ounces

6. Solve for x:

(a)  $10^{x-3} = 10^2$ , x =                     

(b)  $\log(x-2) = 1$ , x =                     

(c)  $\log(5x) = -1$ , x =                     

(d)  $10^{2x-1} = 10^4$ , x =                     

7. Simplify to an expression in log y:

$$\log(10^3 y^2) = \underline{\hspace{2cm}}$$