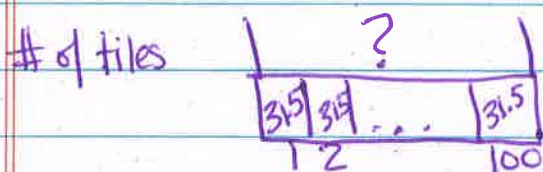


Jack & Kevin will need 3,150 tiles to complete the mosaic.



$$100 \times 31.5 = ?$$

#	th	h	t	o	t
	1	1	3	1	5
	3	1	5	0	

MIL3: Using Exponents

Exponent: number to the power of _____

10^5 = ten to the fifth power = $\boxed{10^5}$ - exponential form

$10^5 = 10 \times 10 \times 10 \times 10 \times 10 =$ expanded form

$10^5 = 100,000 =$ standard form

$$\underline{10} \times \underline{100} = \underline{1000} = 10^3$$

$$100 \times 1000 = 100,000 = 10^5$$

$$3 \times 10^2 = 3 \times 100 = 300$$

$$3.4 \times 10^3 = 3.4 \times 1000 = 3400$$

$$700 \div 10^2 = 700 \div 100 = 7$$

$$7.1 \div 10^2 = 7.1 \div 100 = 0.071$$

0.043 4.3 430 43000 4300,000 430,000,000

<u>1,000,000</u>	<u>100,000</u>	<u>10,000</u>	<u>1,000</u>	<u>100</u>	<u>10</u>
$10 \times 10 \times 10$ $\times 10 \times 10$ $\times 10$	$10 \times 10 \times$ 10×10 $\times 10$	10×10 $\times 10 \times 10$	$10 \times 10 \times 10$	10×10	10×1
10^6	10^5	10^4	10^3	10^2	10^1

factor: numbers multiplied together (3 × 5)
 product: answer to multiplication problem $3 \times 5 = 15$

powers of 10 chart

1,000,000	100,000	10,000	1,000	100	10	1	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1,000}$	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths	
						3	:	4														
							.															

millions to thousandths place value chart

Name _____

Date _____

1. Write the following in exponential form (e.g., $100 = 10^2$).

a. $10,000 = 10^4$

d. $100 \times 100 =$ _____

b. $1,000 =$ _____

e. $1,000,000 =$ _____

c. $10 \times 10 =$ _____

f. $1,000 \times 1,000 =$ _____

2. Write the following in standard form (e.g., $5 \times 10^2 = 500$).

a. $9 \times 10^3 = 9,000$

e. $4.025 \times 10^3 =$ _____

b. $39 \times 10^4 =$ _____

f. $40.25 \times 10^4 =$ _____

c. $7,200 \div 10^2 =$ _____

g. $72.5 \div 10^2 =$ _____

d. $7,200,000 \div 10^3 =$ _____

h. $7.2 \div 10^2 =$ _____

3. Think about the answers to Problem 2(a–d). Explain the pattern used to find an answer when you multiply or divide a whole number by a power of 10.

4. Think about the answers to Problem 2(e–h). Explain the pattern used to place the decimal in the answer when you multiply or divide a decimal by a power of 10.