7,1 Decimals

Place value:

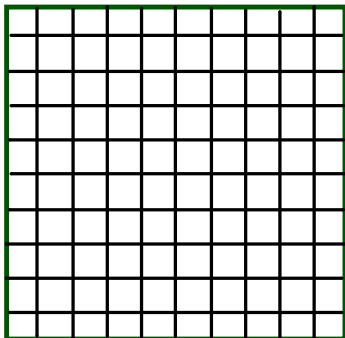___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

Example: Let one "flat" represent one unit. Then, what does a long represent? What does one square represent?

Write these numbers in expanded form.

(a) 3476.981

(b) 8002.0045

We can also use a "hundreds square" to help us convert between decimals and fractions.

Ex 1. Write these fractions as decimals.

(a) $5\dfrac{3}{8}$

(b) $\dfrac{3}{2^2 \cdot 5^4}$

(c) $\dfrac{21}{2^3 \cdot 5 \cdot 3}$

Ex 2. Write these decimals as fractions.

(a) 69.07   (b) -135.000084

Ordering Decimals

Methods:

(1) hundreds square

(2) Number line

(3) Convert to fractions

(4) place value

Under what conditions does a fraction covert to a terminating decimal?

Look at these examples:

$$\frac{7}{8} \qquad\qquad \frac{3}{35} \qquad\qquad \frac{13}{250} \qquad\qquad \frac{21}{2^3 \cdot 5 \cdot 3}$$

Fact: Any rational number, in simplest form, converts to a terminating decimal iff

_____.