

Name: _____

Zero as a Fraction **F6**

Here is a circle that has been divided into **9** equal pieces.
How much of it is shaded? None of it.

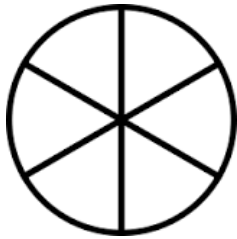
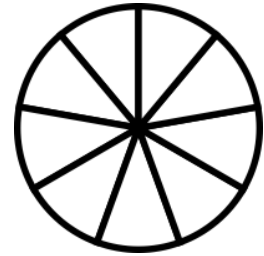
What *fraction* of it is shaded? Let's see...

There are **9** pieces and **0** pieces are shaded.

0 out of **9** pieces are shaded. So, **0/9** circle is shaded.

How many circles are shaded? **0** circles are shaded.

0/9 circle is **0** circle. **0/9 = 0**.



This circle has been divided into **6** equal parts. What fraction of this circle is shaded?

0 parts out of **6** parts are shaded. That's **0/6** shaded circle.

How many shaded circles do we have? Again, **0** circles.

0/6 circle is **0** circle. **0/6 = 0**.

0/9 and **0/6** are each equal to **0**. So are 0/1, 0/2, 0/14, and 0/67.

Any fraction that has 0 for a numerator is equal to zero.

NOTE: A fraction **cannot** have zero for a *denominator*. Our number system does not allow it.

This makes sense. You can't divide something into **0** parts. (Remember: You can't divide by zero.) And if you don't divide it at all, you still have the whole thing. You still have **1** whole.

Use the symbols {<, =, >} to compare the following fractions:

$\frac{3}{4}$ _____ $\frac{2}{4}$ $\frac{4}{7}$ _____ $\frac{6}{7}$ $\frac{4}{4}$ _____ $\frac{5}{5}$ $\frac{1}{1}$ _____ 0

$\frac{0}{7}$ _____ $\frac{0}{2}$ 1 _____ $\frac{9}{9}$ $\frac{0}{3}$ _____ 0 $\frac{0}{1}$ _____ 0