Lesson 3-3 – Decimals as Base-10 Fractions (Substitute)

Objectives:
- Students will divide positive integers from the multiplication table without remainders, as evidenced by them passing one-minute quizzes.
- Students will write base-10 fractions in expanded form, and then as decimals, as evidenced by them completing a homework assignment where they do so.
- Students will write decimals in expanded form, and then as base-10 fractions, as evidenced by them completing a homework assignment where they do so.

Student Materials on Desk Corner:
- Homework #3-2
- Homework Checker
- Warm-up & Notes Checker

Student Materials for Class:
- Homework Log
- Binder Paper
- Pencils

Teacher Materials:
- "Seating Chart" transparency
- "Minute Quiz 3-3" for each student
- "Homework #3-3" handout for each student

Homework:
- Finish Homework #3-3
- Finish 1 hour of ALEKS

Time	Activity
10 min	**MINUTE QUIZ AND ATTENDANCE** **Seating Chart** Before the bell rings, put the seating chart transparency on the overhead projector. Students should sit in their assigned seats. The teacher's aide (TA) can sit wherever he wants. **Minute Quiz** When the bell rings, quickly go around and put a **minute quiz** on each student's desk, face down. Then, start everyone on the quiz at the same time and give everyone one minute. After the minute is over, have the TA collect and grade them. **Overview of the Period** Let students know that for class today, they will first do their homework packet as their classwork. Once they finish, they must have it checked by you (the teacher) or the TA. Then, they can receive permission to work on ALEKS. Remind students that they must have 1 hour a week on ALEKS. Hopefully they will stay focused and put a lot of time into ALEKS today. Any extra time on ALEKS by the end of the semester becomes extra credit. **Collect "Warm-up & Notes Checker" and Previous Homework** Instruct the TA to collect the "warm-up & notes checker" and the previous night's homework. Let the class know that for their "notes" grade for today, the TA will be seeing whether students are on-task or not. If a student is on-task, the TA will give him/her 100 points for the day. If the student is off task, he/she will receive fewer points.
30 min	**WORKSHEET TIME** **Worksheet** Give each student the **homework 3-3** packet. They must finish the whole packet before they can work on ALEKS. Whatever they do not finish becomes their homework. Students will turn in their homework packets to me next week.
35 min	**ALEKS** For the rest of the time, students will be working with a computer program called **ALEKS** (www.aleks.com). In the back of the room is a large white cart filled with **laptops**. The combination for the lock is 1929. Please unlock the cart yourself and do not give students the combination.

	Students can get any laptop they want. They should be working on ALEKS at their desks. We have been using ALEKS the whole year, so students have no excuse for being off-task. Students should **only use the laptops for ALEKS**. If you catch a student visiting other websites or playing with other programs, please write them a referral and send them to the front office. There are some orange referrals on my desk.
5 min	**CLEAN UP** All the laptops must be put away and their power cords plugged in. Students should stay in their seats until you dismiss them. That is, you dismiss the class, not the bell.

Problems?
If there are any major problems, please call the front desk at extension **221** and ask for an administrator to be sent to the classroom (room 10).

Numeracy
Minute Quiz 3-3 A

Name:
Date: Period:

Solve the following division problems. You have exactly one minute!

72 ÷ 9 =   9 ÷ 3 =   66 ÷ 11 =

24 ÷ 6 =   40 ÷ 10 =   30 ÷ 10 =

24 ÷ 3 =   9 ÷ 3 =   36 ÷ 9 =

6 ÷ 1 =   15 ÷ 5 =   15 ÷ 5 =

Numeracy   Name:
Minute Quiz 3-3 B   Date: Period:

Solve the following division problems. You have exactly one minute!

6 ÷ 2 =	6 ÷ 1 =	21 ÷ 7 =
40 ÷ 10 =	24 ÷ 12 =	32 ÷ 4 =
15 ÷ 5 =	35 ÷ 7 =	5 ÷ 1 =
77 ÷ 11 =	40 ÷ 5 =	72 ÷ 8 =

Numeracy   Name:
Minute Quiz 3-3 C   Date: Period:

Solve the following division problems. You have exactly one minute!

28 ÷ 4 =   2 ÷ 1 =   20 ÷ 5 =

6 ÷ 1 =   1 ÷ 1 =   40 ÷ 5 =

99 ÷ 11 =   3 ÷ 1 =   72 ÷ 8 =

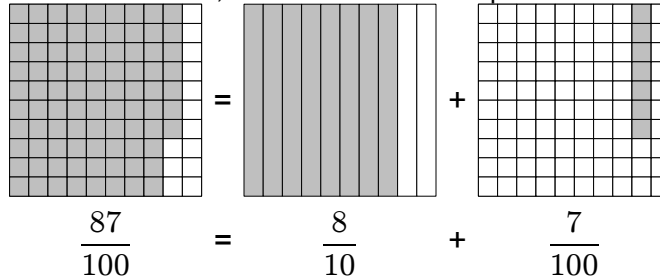60 ÷ 10 =   54 ÷ 6 =   20 ÷ 4 =

Part 1A: Base-10 Fractions → Expanded Form → Decimals

Ex) Write $\dfrac{87}{100}$ as a decimal.

First, draw the base-10 fraction. Then, draw and write it in expanded form.

$$\frac{87}{100} \quad = \quad \frac{8}{10} \quad + \quad \frac{7}{100}$$

Using the expanded form, fill in the following place value chart.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's
			8	7	

Reading the decimal from the chart,

$$\frac{87}{100} = \boxed{0.87}$$

1) Write $\dfrac{63}{100}$ as a decimal.

First, draw the base-10 fraction. Then, draw and write it in expanded form.
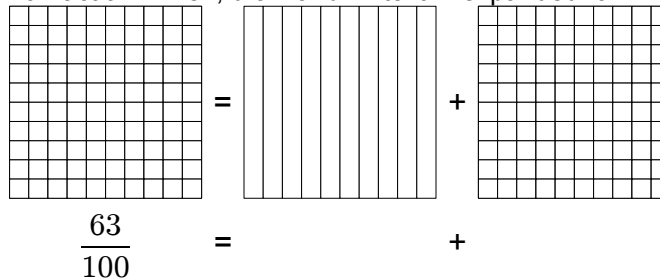
$$\frac{63}{100} \quad = \qquad + $$

Using the expanded form, fill in the following place value chart.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

Reading the decimal from the chart,

$$\frac{63}{100} =$$

2) Write $\dfrac{20}{100}$ as a decimal.

First, draw the base-10 fraction. Then, draw and write it in expanded form.

$$= \qquad + $$
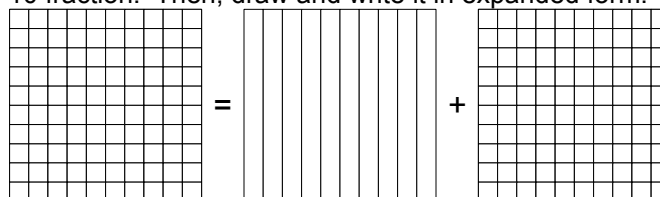
$$\frac{20}{100} \quad = \quad \qquad + \qquad$$

Using the expanded form, fill in the following place value chart.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

Reading the decimal from the chart,

$$\frac{20}{100} =$$

3) Write $\frac{75}{100}$ as a decimal.

First, draw the base-10 fraction. Then, draw and write it in expanded form.

$$\frac{75}{100} \quad = \quad \qquad + \qquad$$

Using the expanded form, fill in the following place value chart.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

Reading the decimal from the chart,

$$\frac{75}{100} =$$

4) Write $\frac{7}{100}$ as a decimal.

First, draw the base-10 fraction. Then, draw and write it in expanded form.

$$\frac{7}{100} \quad = \quad \qquad + \qquad$$

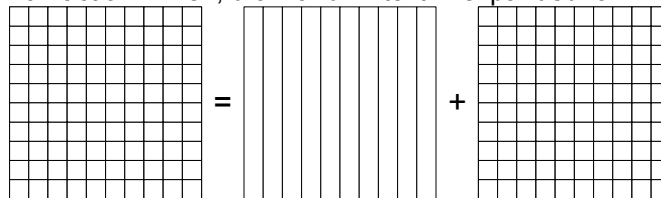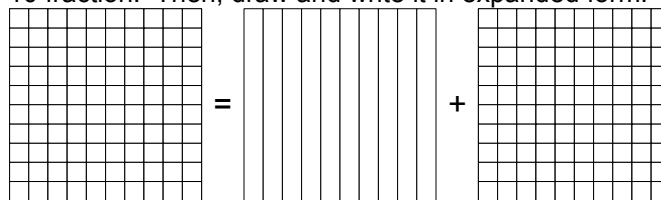Using the expanded form, fill in the following place value chart.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

Reading the decimal from the chart,

$$\frac{7}{100} =$$

Part 1B: Base-10 Fractions → Expanded Form → Decimals

Ex) Write $120\frac{405}{1000}$ as a decimal.

Expanded form: $120\frac{405}{1000} = 100 + 20 + \frac{4}{10} + \frac{5}{1000}$

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's
1	2	0	4	0	5

Reading the decimal from the chart

$$120\frac{405}{1000} = \boxed{120.405}$$

5) Write $405\frac{7}{100}$ as a decimal.

Expanded form: $405\frac{7}{100} =$

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

Reading the decimal from the chart

$$405\frac{7}{100} =$$

6) Write $2\frac{73}{100}$ as a decimal.

Expanded form: $2\frac{73}{100} =$

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

Reading the decimal from the chart

$$2\frac{73}{100} =$$

7) Write $12\frac{25}{1000}$ as a decimal.

Expanded form: $12\frac{25}{1000} =$

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

Reading the decimal from the chart

$$12\frac{25}{1000} =$$

Part 2: Decimals → Expanded Form → Base-10 Fractions

Ex) Write 2.718 as a base-10 fraction.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's
		2	7	1	8

So,

$$2.718 = 2 + \frac{7}{10} + \frac{1}{100} + \frac{8}{1000} = \boxed{2\frac{718}{1000}}$$

8) Write 1.732 as a base-10 fraction.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

So,

$1.732 =$

9) Write 62.083 as a base-10 fraction.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

So,

$62.083 =$

10) Write 704.56 as a base-10 fraction.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

So,

$704.56 =$

11) Write 0.203 as a base-10 fraction.

Hundreds 100's	Tens 10's	Ones 1's	Tenths 1/10's	Hundredths 1/100's	Thousandths 1/1000's

So,

$0.203 =$