

ADDITION 6.NS.3

Addition of Decimals: Different Number of Decimal Places

Purpose: To add decimals having different numbers of decimal places

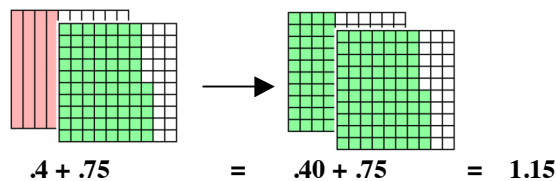
Materials: *Decimal Squares*, "Blank *Decimal Squares* for Adding Decimals" (attached), "Place Value Tables for Addition" (attached), "Tenths and Hundredths Decimal Number Lines" (attached), and markers

TEACHER MODELING/STUDENT COMMUNICATION

Activity 1 Adding Decimals with *Decimal Squares*

Decimal Squares

1. Select a red *Decimal Square* and a green *Decimal Square* and combine their shaded amounts in order to compute the sum of their decimals. In the example below, the total shaded amount is 1 whole square and 15 parts out of 100. Replace the red square by a green square having the same shaded amount. With this replacement, the decimals for the two squares will have the same number of decimal places. The equations below show the decimals for the original two squares, the replacement decimal, and the sum of the two decimals. Repeat this activity as needed.



Blank
Decimal Squares
for
Adding
Decimals

2. Distribute "Blank *Decimal Squares* for Adding Decimals". Shade two *Decimal Squares* in the top row for .67 and .4, shade *Decimal Squares* for their sum, and write an addition equation. Repeat this activity for .8 and .47 in row #2 and for .355 and .37 in row #3.

Activity 2 Place Value Tables and Regrouping

Decimal Squares

1. Select a green *Decimal Square* and a yellow square and write their decimals in a place value table. What can be done to change the two-place decimal to a three-place decimal and why can this be done? (A zero can be placed in the thousandths place for .35 because 35 parts out of 100 equals 350 parts out of 1000.)

	Ones	Tenths	Hundredths	Thousandths
+		3	5	
		4	7	5

Place
Value
Tables
for
Addition

Once both decimals have the same number of decimal places the sum can be computed, regrouping when necessary, just as in adding whole numbers.

2. Students can repeat this activity as needed by selecting two squares with different colors. After the students are familiar with using a place value table, the decimals can be written one above the other in the standard vertical form for carrying out addition.

	Ones	Tenths	Hundredths	Thousandths
+		3	5	0
		4	7	5
		8	2	5

Activity 3 Summarizing to See Patterns and Relationships

Write an explanation of how to add two decimals. (Place the numbers under each other, lining up the decimal points. Place one or more zeros at the end of one decimal, if necessary, so that both decimals have the same number of places. Then add as if adding whole numbers and place the decimal point in the sum directly below the decimal points.)

Activity 4 Sums of Decimals on Number Lines

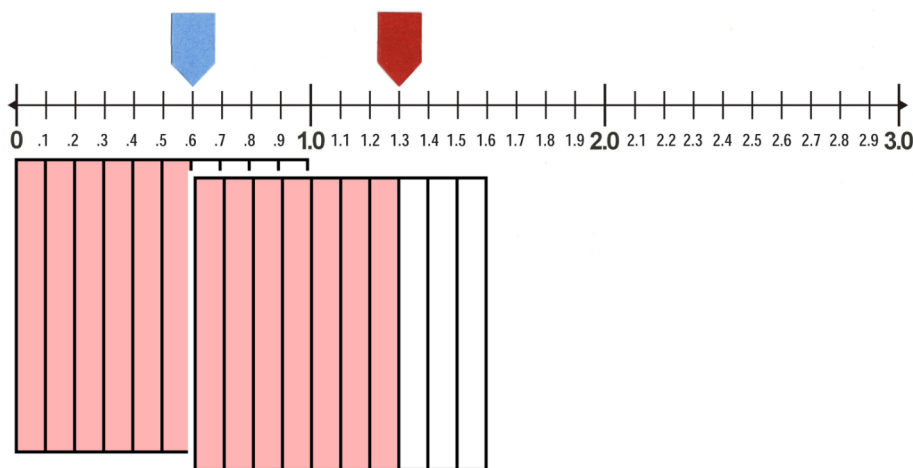
Number Lines for Tenths and Hundredths

Decimal Squares

markers

Distribute copies of the Tenths and Hundredths Number Lines (pages 38 and 39) and *Decimal Squares*.

1. Using the Tenths Number Line, select a tenths *Decimal Square*, place it under the number line between 0 and 1.0, and place a marker on the number line for the square's decimal. Then select a second tenths decimal square, place it under the number line beginning at the decimal point for the first square, and place a second marker on the number line for the sum of the two decimals. In this example, squares for .6 and .7 were selected, and the addition equation, $.6 + .7 = 1.3$, shows the sum.



2. Repeat this activity using the hundredths number line. Select one *Decimal Square* for tenths and one for hundredths and write an addition equation for the sum of the decimals.

INDEPENDENT PRACTICE and ASSESSMENT

Worksheets 6.NS.3 #3 and #4

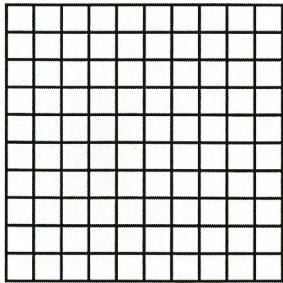


decimalsquares.com **Decimal Squares Blackjack** (This game uses tenths, hundredths, and thousandths *Decimal Squares Playing Cards* at the Advanced Level. The object is to get as close as possible to a sum of 2 without going over. In this round the Robot's sum was greater than 2 and so Sydney won the Hand.)

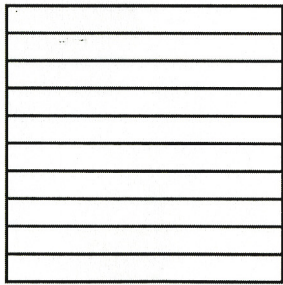


Shade the first and second squares in each row for two decimals and shade one or two squares for the sum. Write an equation for the sum.

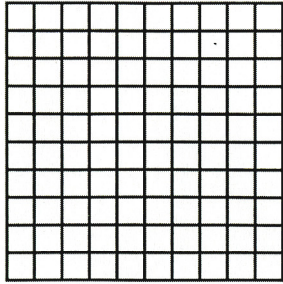
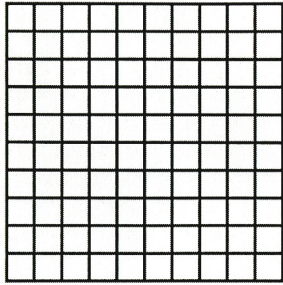
1.



+

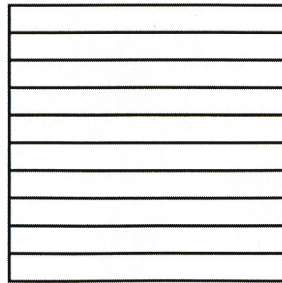


=

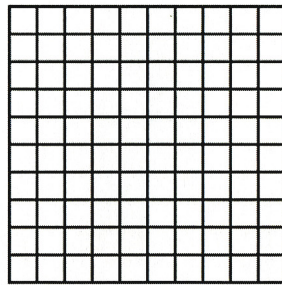


Equation: _____ + _____ = _____

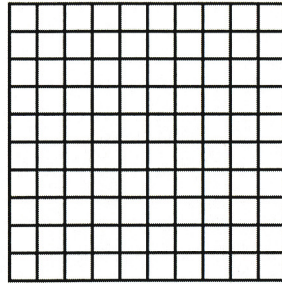
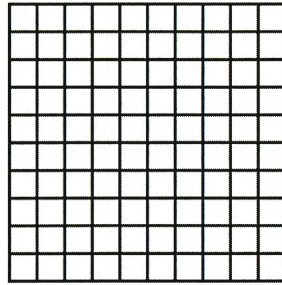
2.



+

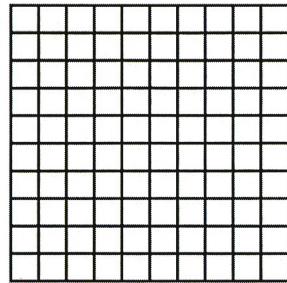


=

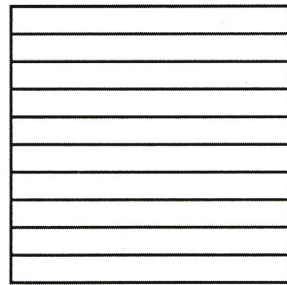


Equation: _____ + _____ = _____

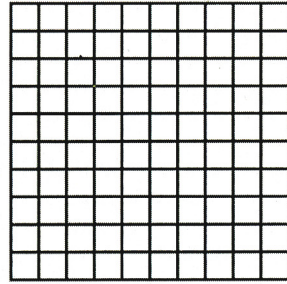
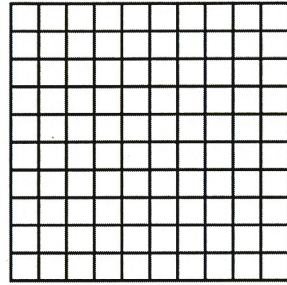
3.



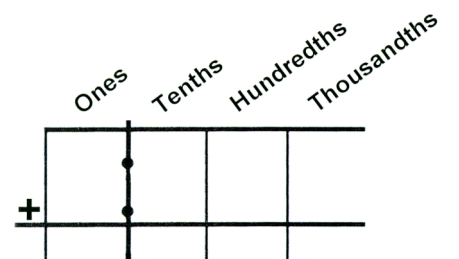
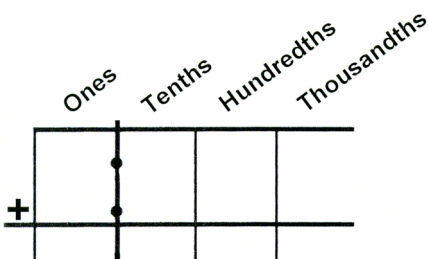
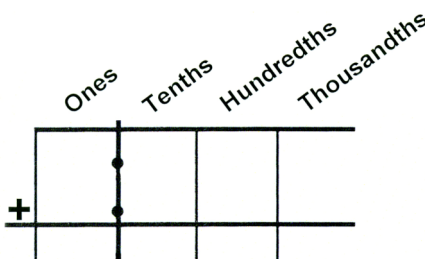
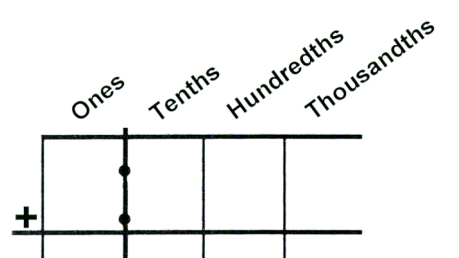
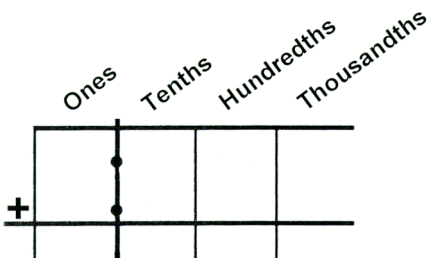
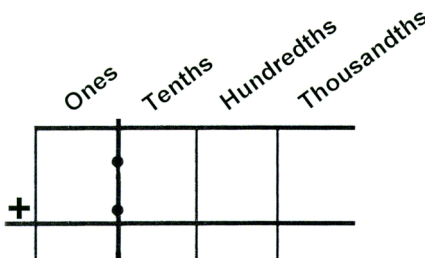
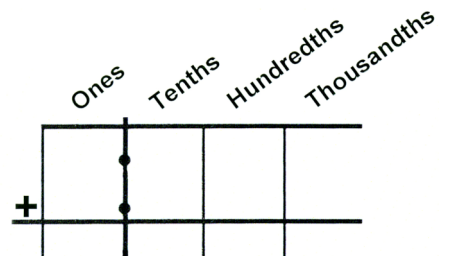
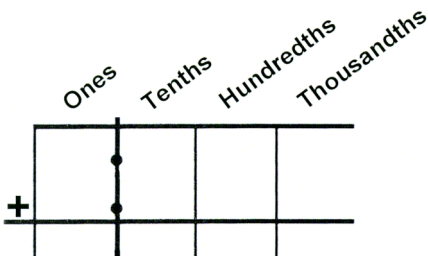
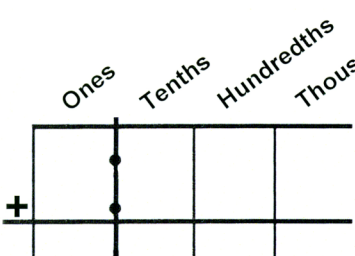
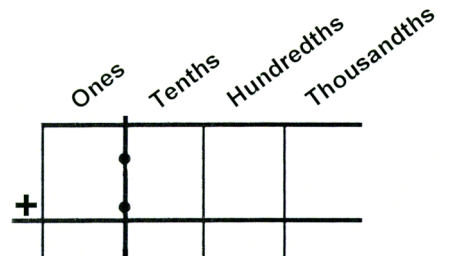
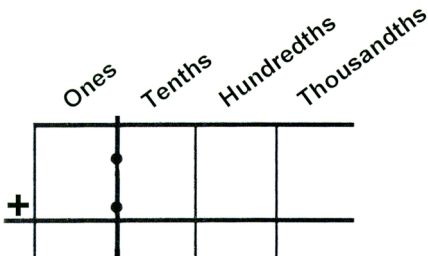
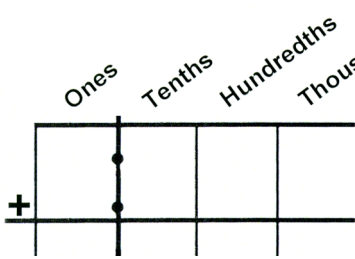
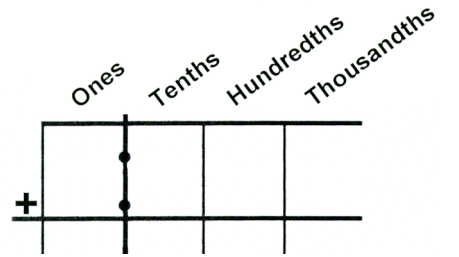
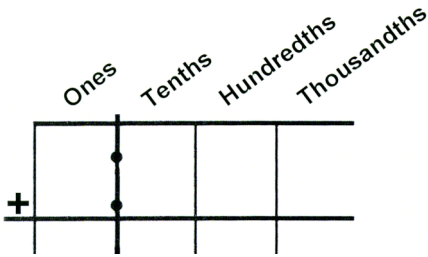
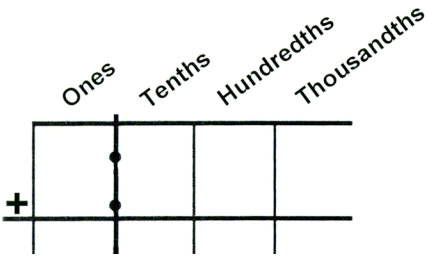
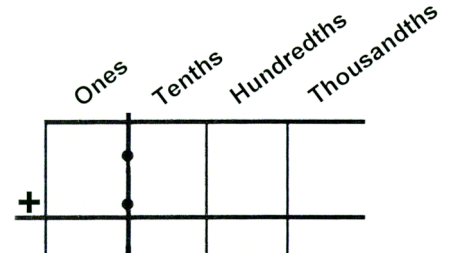
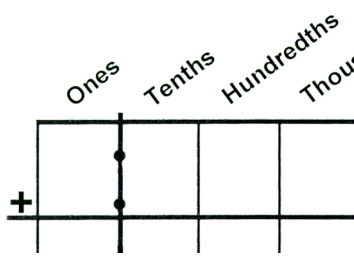
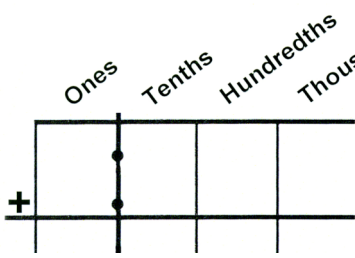
+



=

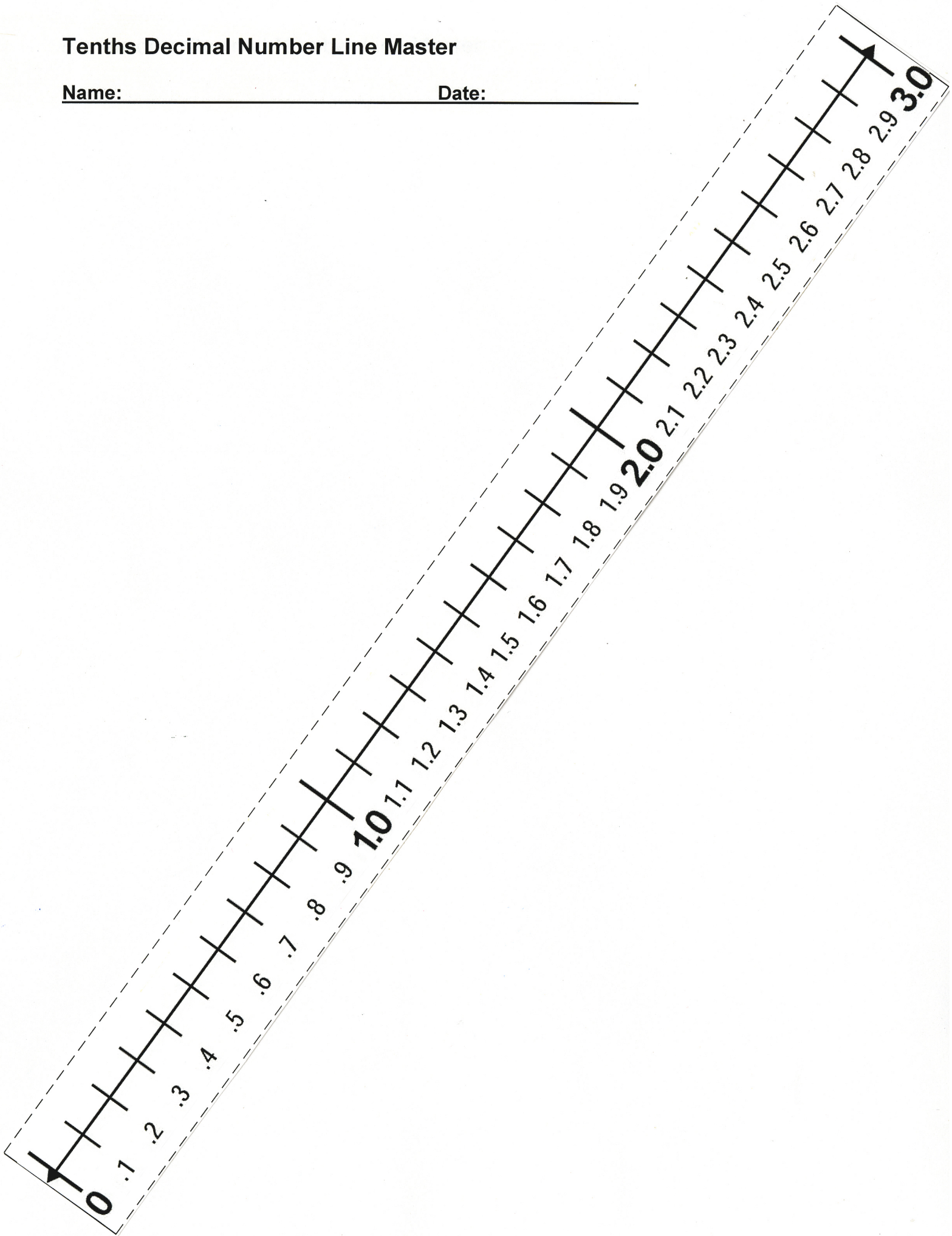


Equation: _____ + _____ = _____



Tenths Decimal Number Line Master

Name: _____ Date: _____



Hundredths Decimal Number Line Master

Name: _____ Date: _____

