Name _____   Date _____

1. Represent the following expressions with disks, regrouping as necessary, writing a matching expression, and recording the partial products vertically.

a.   3 × 24

tens	ones

b.   3 × 42

hundreds	tens	ones

c.   4 × 34

hundreds	tens	ones

2. Represent the following expressions with disks, regrouping as necessary. To the right, record the partial products vertically.

   a. 4 × 27

hundreds	tens	ones

   b. 5 × 42

hundreds	tens	ones

3. Cindy says she found a shortcut for doing multiplication problems. When she multiplies 3 × 24, she says, "3 × 4 is 12 ones, or 1 ten and 2 ones. Then, there's just 2 tens left in 24, so add it up, and you get 3 tens and 2 ones." Do you think Cindy's shortcut works? Explain your thinking in words and justify your response using a model or partial products.

Answer Key

1. Disks drawn and partial products recorded

   a. 3 × 2 tens + 3 × 4 ones; 72

   b. 3 × 4 tens + 3 × 2 ones; 126

   c. 4 × 3 tens + 4 × 4 ones; 136

2. Disks drawn and partial products recorded

   a. 108

   b. 210

3. No; explanations will vary.