Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table# \_\_\_\_ Period: \_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_

**7.4e A NOTES – Repeating Decimals**

*Objective: Students can convert a repeating decimal to a fraction by writing and solving equations. CCSS: 8.NS.1.*

*HW: (7.4e1) p. 316 #1 – 4 (Solutions on p. A33)*

|  |  |
| --- | --- |
|  | **WATCH VIDEO: 7.4e, EXAMPLE 1**Write $1.\overbar{7}$ as a fraction in simplest form.Step 1: $x=1.\overbar{7}$Step 2: $10∙x=1.\overbar{7} ∙10$  $ 10x=17.\overbar{7}$Step 3: - $( x= 1.\overbar{7)}$  9x = 16Step 4: $ \frac{9x}{9 }= \frac{16}{9}$  $x= \frac{16}{9}=1\frac{7}{9}$ so $1.\overbar{7}= \frac{16}{9}=1\frac{7}{9}$ |

**EXAMPLES**

|  |  |
| --- | --- |
| 1. Write $1.\overbar{7}$ as a fraction in simplest form.
 | 1. Write $-2.\overbar{4}$ as a mixed number.
 |

BACK 🡪

**ON YOUR OWN**

|  |  |
| --- | --- |
| 1. Write $0.\overbar{4}$ as a fraction in simplest form | 2. Write $-1.\overbar{8}$ as a fraction in simplest form. |
| 3. Write $2.\overbar{1}$ as a mixed number | 4. Write $-3.\overbar{5}$ as a fraction in simplest form |

**++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++**

**WARM-UP**

|  |  |
| --- | --- |
| 1. Convert $2\frac{3}{5}$ to an improper fraction.  | 2. Convert $\frac{17}{4}$ to a mixed number. |

Mark an X for each category that applies.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Number | Real | Rational | Irrational | Integer | Whole | Natural |
| 3 | 0 |  |  |  |  |  |  |
| 4 | -1.125 |  |  |  |  |  |  |
| 5 | 0.9875298752… |  |  |  |  |  |  |
| 6 | $$\sqrt[3]{-216}$$ |  |  |  |  |  |  |
| 7 | 3.592345.. |  |  |  |  |  |  |
| 8 | $$\sqrt{80}$$ |  |  |  |  |  |  |