Name _____

Estimate Quotients

I Can estimate decimal quotients.

Florida's B.E.S.T.

- **Number Sense & Operations** 5.NSO.2.4, 5.NSO.2.5
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1, MTR.7.1

UNLOCK the Problem

Carmen likes to ski. The ski resort where she goes to ski got 3.2 feet of snow during a 5-day period. The *average* daily snowfall for a given number of days is the quotient of the total amount of snow and the number of days. Estimate the average daily snowfall.

You can estimate decimal quotients by using compatible numbers. When choosing compatible numbers, you can look at the whole-number part of a decimal dividend or rename the decimal dividend as tenths or hundredths.

Estimate. 3.2 ÷ 5

Suki and her friend Marco each find an estimate. Since the divisor is greater than the dividend, they both first rename 3.2 as tenths.

3.2 is _____ tenths.

SUKI'S ESTIMATE

30 tenths is close to 32 tenths and divides easily by 5. Use a basic fact to find 30 tenths ÷ 5.

30 tenths ÷ 5 is _____ tenths or _____.

So, the average daily snowfall is about

_____ foot.

MARCO'S ESTIMATE

35 tenths is close to 32 tenths and divides easily by 5. Use a basic fact to find 35 tenths ÷ 5.

35 tenths ÷ 5 is _____ tenths or _____.

So, the average daily snowfall is about

_____ foot.

1. MTR Whose estimate do you think is closer to the exact quotient?

Explain your reasoning. _____

2. Explain how you would rename the dividend in 29.7 ÷ 40 to choose compatible numbers and estimate the quotient.

Estimate with 2-Digit Divisors

When you estimate quotients with compatible numbers, the number you use for the dividend can be greater than the dividend or less than the dividend.

Example

A group of 31 students is going to visit the museum. The total cost for the tickets is $144.15. About how much money will each student need to pay for a ticket?

Estimate. $144.15 ÷ 31

A **Use a whole number greater than the dividend.**

Use 30 for the divisor. Then find a number close to and greater than $144.15 that divides easily by 30.

$144.15 ÷ 31
↓ ↓
$150 ÷ 30 = $ _____

So, each student will pay about $ _____ for a ticket.

B **Use a whole number less than the dividend.**

Use 30 for the divisor. Then find a number close to and less than $144.15 that divides easily by 30.

$144.15 ÷ 31
↓ ↓
$120 ÷ 30 = $ _____

So, each student will pay about $ _____ for a ticket.

3. MTR Which estimate do you think will be a better estimate of the cost of a ticket? Explain your reasoning. _____

_____

_____

Share and Show Math Board

Use compatible numbers to estimate the quotient.

1. 28.8 ÷ 9

_____ ÷ _____ = _____

2. 393.5 ÷ 41

_____ ÷ _____ = _____