G5-M2-Lesson 25

1. Estimate the quotients.

I look at the divisor, 72, and round it to the nearest ten. $72 \approx 70$

a. $5.68 \div 72$

$\approx 560 \text{ hundredths} \div 70$

$= 560 \text{ hundredths} \div 10 \div 7$

$= 56 \text{ hundredths} \div 7$

$= 8 \text{ hundredths}$

$= 0.08$

I can think of the dividend as 568 hundredths. 560 is close to 568 and a multiple of 70, so I can round 568 hundredths to 560 hundredths.

Dividing by 70 is the same as dividing by 10 and then dividing by 7.

The basic fact $56 \div 7 = 8$ helps me solve this problem.

I look at the divisor, 41, and round it to the nearest ten. $41 \approx 40$

b. $9.14 \div 41$

$\approx 8 \div 40$

$= 8 \div 4 \div 10$

$= 2 \div 10$

$= 0.2$

I'll approximate the dividend, 9.14, to be 8. I'll use the basic fact, $8 \div 4 = 2$, to help me solve this problem.

Dividing by 40 is the same as dividing by 4 and then dividing by 10.

I can visualize a place value chart. Dividing by 10 moves the digit, 2, one place to the right.

2. Estimate the quotient in (a). Use your estimated quotient to estimate (b) and (c).

$18 \approx 20$

a. $5.29 \div 18$

$\approx 6 \div 20$

$= 6 \div 2 \div 10$

$= 3 \div 10$

$= 0.3$

$5.29 \approx 6$. I can use the basic fact, $6 \div 2 = 3$, to help me solve this problem.

Dividing by 20 is the same as dividing by 2 and then dividing by 10.

Since the digits in this expression are the same as (a), I can use place value understanding to help me solve.

b. $529 \div 18$

$\approx 600 \div 20$

$= 60 \div 2$

$= 30$

I can use the same basic fact, $6 \div 2 = 3$, to help me solve.

$18 \approx 20$ and $529 \approx 600$

$600 \div 20$ is equal to $60 \div 2$ because I divided both the dividend and the divisor by 10.

My quotient makes sense! When I compare (b) to (a), I see that 529 is 100 times greater than 5.29. Therefore, the quotient should be 100 times greater as well. 30 is 100 times greater than 0.3.

c. $52.9 \div 18$

$\approx 60 \div 20$

$= 6 \div 2$

$= 3$

Again, I can use the same basic fact, $6 \div 2 = 3$, to help me solve this problem.

I'll round 18 to 20 and approximate 52.9 to 60.

$60 \div 20$ is equal to $6 \div 2$ because I divided both the dividend and the divisor by 10.