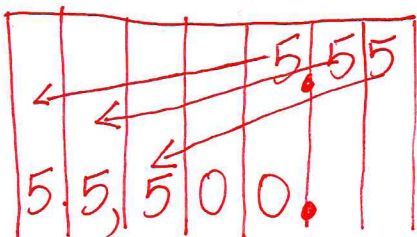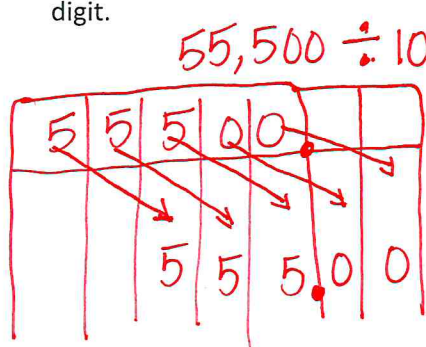b. Multiply 5.55×10^4. Explain the shift of the digits and the change in the value of each digit.

5.55

5 5, 5 0 0.

When multiplying by 10^4, each digit shifts 4 places to the left. 10^4 equals $10 \times 10 \times 10 \times 10$, or, 10,000, so each digit becomes 10,000 times as large.

c. Divide the product from (b) by 10^2. Explain the shift of the digits and the change in the value of each digit.
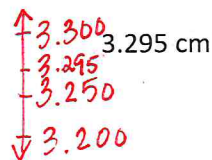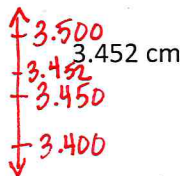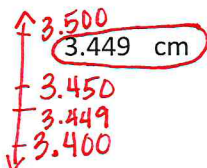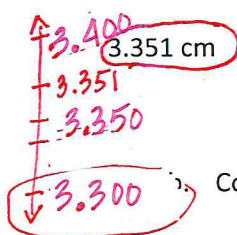
$$55,500 \div 10^2 = 555$$

5 5 5 0 0

5 5 5 0 0

When dividing by 10^2, each digit shifts 2 places to the right. $10^2 = 10 \times 10$, or 100, so each digit becomes $\frac{1}{100}$ as large.

3. Rainfall collected in a rain gauge was found to be 3.4 cm when rounded to the nearest tenth of a centimeter.

a. Circle all the measurements below that could be the actual measurement of the rainfall.

3.400 — 3.351 cm
3.351
3.350
3.300

3.500 — 3.449 cm
3.450
3.449
3.400

3.500 — 3.452 cm
3.452
3.450
3.400

3.300 — 3.295 cm
3.295
3.250
3.200

b. Convert the rounded measurement to meters. Write an equation to show your work.

$$3.4 \div 10^2 = 0.034 \text{ m}$$

$$3.4 \text{ cm} = 0.034 \text{ m}$$

$$100 \text{ cm} = 1 \text{ m}$$

$$\downarrow$$

$$100 \div 10^2 = 1$$