Two-Way Tables

Pregnant women often undergo ultrasound tests to monitor their babies' health. These tests can also be used to predict the gender of the babies, but these predictions are not always accurate. Data on the gender predicted by ultrasound and the actual gender of the baby for $1{,}000$ babies are summarized in the two-way table below.

		Predicted Gender	
		Female	Male
Actual Gender	Female	432	48
	Male	130	390

1. Write a sentence explaining the meaning of the frequency 130 in this table.

Use the table provided above to calculate the following relative frequencies.

2. What is the proportion of babies who were predicted to be male but were actually female?

3. What is the proportion of incorrect ultrasound gender predictions?

4. For babies predicted to be female, what proportion of the predictions were correct?

5. For babies predicted to be male, what proportion of the predictions were correct?

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Pregnant women often undergo ultrasound tests to monitor their babies' health. These tests can also be used to predict the gender of the babies, but these predictions are not always accurate. Data on the gender predicted by ultrasound and the actual gender of the baby for $1{,}000$ babies are summarized in the two-way table below.

		Predicted Gender	
		Female	Male
Actual Gender	Female	432	48
	Male	130	390

1. Write a sentence explaining the meaning of the frequency 130 in this table.

The frequency of 130 represents the number of babies who were predicted to be female but were actually male (i.e., the ultrasound prediction was not correct for these babies).

Use the table provided above to calculate the following relative frequencies.

2. What is the proportion of babies who were predicted to be male but were actually female?

$$\frac{48}{1000} = 0.048$$

3. What is the proportion of incorrect ultrasound gender predictions?

$$\frac{130 + 48}{1000} = 0.178$$

4. For babies predicted to be female, what proportion of the predictions were correct?

$$\frac{432}{562} \approx 0.769$$

5. For babies predicted to be male, what proportion of the predictions were correct?

$$\frac{390}{438} \approx 0.890$$