

# Mean, Median, and Mode for Frequency Tables

## Problem of the Day

The number of hours worked by ten students during the past week are 5, 10, 10, 15, 5, 10, 10, 20, 25, 15 hours.

Find the mean, median and mode for this the number of hours worked by the ten students.

Review with students how they found each of the measures of central tendency.

Ask students to complete a frequency table for the 10 students.

Hours Worked	Tally	Frequency

If you were only given the frequency table, how would you calculate the mode of the data?

If you were only given the frequency table, how would you calculate the median of the data?

If you were only given the frequency table, how would you calculate the mean of the data?

Let's try to understand each of these value a little more. Using connecting cubes build a strip that represents each student's total hours worked during this past week.

- How can you identify the mode?
- How can you identify the median?
- What is the significance of the mean?

If the ten students wanted to change their mode to a different number of hours how could this be accomplished?

If the ten students wanted to change their median to a different number of hours how could this be accomplished.

If the ten students wanted to change their average number of hours to 13 hours per week, how could this be accomplished? How would you do it to make the average 14 hours? Can you generalize how you would do it to get any average?

Suppose that in thirty shots at a target, a marksman makes the following scores:

5 2 2 3 4 4 3 2 0 3 0 3 2 1 5 1 3 1 5 5 2 4 0 0 4 5 4 4 5 5

Create a frequency table for the data.

Calculate the mean, median, and mode for the data.

Score	Tally	Frequency

Additional Questions:

How would it be possible to change the median to another value?

How would it be possible to change the mode to another value?

How would it be possible to change the mean to another value?

I will roll two dice are rolled 36 times on the graphing calculator.

Record the sums on each roll in the chart below.

<b>Roll</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>Sum</b>												
<b>Roll</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>Sum</b>												
<b>Roll</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>
<b>Sum</b>												

Create a frequency table for the data.

<b>Sum</b>	<b>Tally</b>	<b>Frequency</b>

Using the frequency table find the

mean

median

mode

Why do each of these values make sense to you?