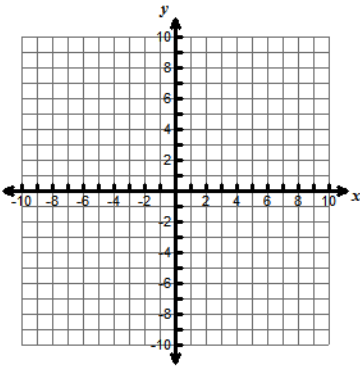
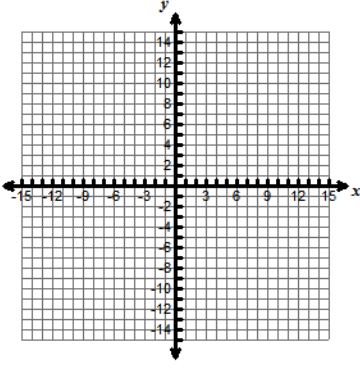
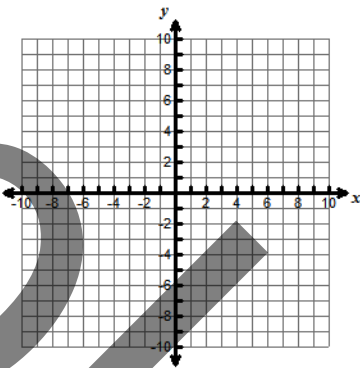


Lesson 6: Writing Linear Equations
Explore

For each situation, fill in the table, write a function rule, plot the points and then use your graphing calculator to check your function rule.

| Situation | Table | Function | Graph | | | | | | | | | | |
|---|---|----------|----------|---|--|---|--|---|--|---|--|---------------|--|
| <p>A student started 18 feet from a motion detector and walked toward the motion detector at a rate of 3 feet per second.</p> | <table border="1" style="margin: auto;"> <thead> <tr style="background-color: #8e7cc3; color: white;"> <th>Time</th> <th>Distance</th> </tr> </thead> <tbody> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> <tr><td>3</td><td></td></tr> </tbody> </table> | Time | Distance | 0 | | 1 | | 2 | | 3 | | $y = 18 - 3x$ | |
| Time | Distance | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| <p>A student walked away from a motion detector at a rate of 2 feet per second. At 3 seconds he was 10 feet from the motion detector.</p> | <table border="1" style="margin: auto;"> <thead> <tr style="background-color: #8e7cc3; color: white;"> <th>Time</th> <th>Distance</th> </tr> </thead> <tbody> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> <tr><td>3</td><td></td></tr> </tbody> </table> | Time | Distance | 0 | | 1 | | 2 | | 3 | | | |
| Time | Distance | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| <p>A student walked toward a motion detector at a rate of 3 feet per second. At 2 seconds he was 9 feet from the motion detector.</p> | <table border="1" style="margin: auto;"> <thead> <tr style="background-color: #8e7cc3; color: white;"> <th>Time</th> <th>Distance</th> </tr> </thead> <tbody> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> <tr><td>3</td><td></td></tr> </tbody> </table> | Time | Distance | 0 | | 1 | | 2 | | 3 | | | |
| Time | Distance | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |

| <p>A line has a y-intercept of 3 and a slope (rate of change) of 3.</p> | <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #4a4a8a; color: white;"> <th style="padding: 5px;">x</th> <th style="padding: 5px;">y</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">-2</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">-1</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">0</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">1</td><td style="text-align: center;"> </td></tr> </tbody> </table> | x | y | -2 | | -1 | | 0 | | 1 | |  | | |
|---|---|---|---|----|--|----|--|----|--|---|--|---|--|---|
| x | y | | | | | | | | | | | | | |
| -2 | | | | | | | | | | | | | | |
| -1 | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | |
| <p>A line passes through the points (-3, -7) and (1, 9).</p> | <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #4a4a8a; color: white;"> <th style="padding: 5px;">x</th> <th style="padding: 5px;">y</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">-3</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">-2</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">-1</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">0</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">1</td><td style="text-align: center;"> </td></tr> </tbody> </table> | x | y | -3 | | -2 | | -1 | | 0 | | 1 | |  |
| x | y | | | | | | | | | | | | | |
| -3 | | | | | | | | | | | | | | |
| -2 | | | | | | | | | | | | | | |
| -1 | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | |
| <p>A line has a slope of 3 and passes through the point (-2, 4).</p> | <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #4a4a8a; color: white;"> <th style="padding: 5px;">x</th> <th style="padding: 5px;">y</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">-2</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">-1</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">0</td><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;">1</td><td style="text-align: center;"> </td></tr> </tbody> </table> | x | y | -2 | | -1 | | 0 | | 1 | |  | | |
| x | y | | | | | | | | | | | | | |
| -2 | | | | | | | | | | | | | | |
| -1 | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | |

1. How did you determine the values to place in the tables?
2. How did you determine the starting point for each function?
3. How did you determine the rate of change for each function?
4. How did you use the starting point and rate of change to write functions rules?
5. How did you use your graphing calculator to check your function rule?