| IM1 LAB 01 - Daily Tasks | | |
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| **Task 1** | **Task 2** | **DC** |
| Put solutions to problems from the previous Problem Set on the board | Discuss all problems and come to a consensus. Record solutions in your notebooks and present solutions. | DC |


| LAB 01 - Graphing Functions on the TI-84 | |
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| **LAB 1.1** | Given the linear function $y = 2x + 5$, graph the function on your TI-84 using a standard view window. Using your calculator, determine the $x$- and $y$-intercepts as well as two points on the graph of this function. Finally, sketch the graph including the four key points into your notebook. Explain why this linear function could be considered as an example of a "growth" function. |
| **LAB 1.2** | Given the linear function $y = -\frac{2}{3}x + 36$, graph the function on your TI-84 using an adjusted view window. Using your calculator, determine the $x$- and $y$-intercepts as well as two points on the graph of this function. Finally, sketch the graph including the four key points into your notebook and record your window settings. Explain why we this linear function could be considered as an example of a "decay" function. |
| **LAB 1.3** | You are now given the equations of the linear functions in standard form. In order to graph these functions on the TI-84, you must convert them to slope-intercept form (also known as function form). Convert the following equations into function form and then graph them on the calculator. NOTE: Window settings probably need to be adjusted and also please determine the $x$- and $y$-intercepts and then finally sketch the functions into your notebook. <br><br>    a.   $2x - 5y = 30$       b.   $3x - 4y = -72$       c.   $x - 2y = 12$ |
| **LAB 1.4** | Given the exponential function $y = \frac{1}{8}(2)^x$, graph the function on your TI-84 using a standard view window. Using your calculator, determine the $x$- and $y$-intercepts (if possible) as well as two points on the graph of this function. Finally, sketch the graph including the key points into your notebook. Explain why this exponential function is an example of a "growth" function. |
| **LAB 1.5** | Given the linear function $y = 250\left(\frac{3}{5}\right)^x$, graph the function on your TI-84 using an adjusted view window. Using your calculator, determine the $x$- and $y$-intercepts (if possible) as well as two points on the graph of this function. Finally, sketch the graph including the four points into your notebook. Explain why this exponential function an example of a "decay" function. |

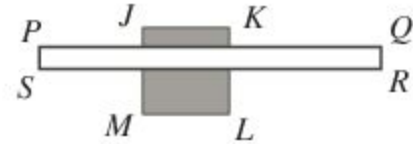| | |
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| **LAB 1.6** | Graph the following exponential functions on the TI-84. Record your window settings and determine the $x$- and $y$-intercepts (if possible) and then sketch the functions in your notebook.<br><br>   a.   $y = 25(1.05)^x$        b.   $y = \frac{1}{20}\left(\frac{3}{2}\right)^x$       c.   $y = 25000(0.75)^x$ |
| **LAB 1.7 HW** | As your follow-up HW assignment for this LAB, graph ALL functions from this LAB using DESMOS. |
| **Contest Corner** | <br><br>1. If $x = 12$ and $y = -6$, then the value of $\dfrac{3x + y}{x - y}$ is<br>  (A) 3      (B) 7      (C) $\frac{5}{3}$      (D) 5      (E) $\frac{7}{3}$<br><br>2. $JKLM$ is a square and $PQRS$ is a rectangle. If $JK$ is parallel to $PQ$, $JK = 8$ and $PS = 2$, then the total area of the shaded regions is<br>  (A) 32      (B) 16      (C) 56<br>  (D) 48      (E) 62<br><br>3. In each row of the table, the sum of the first two numbers equals the third number. Also, in each column of the table, the sum of the first two numbers equals the third number. What is the sum of the nine numbers in the table?<br><br>            <br><br>| $m$ | 4 | $m+4$ |<br>|---|---|---|<br>| 8 | $n$ | $8+n$ |<br>| $m+8$ | $4+n$ | 6 |<br><br>  (A) 18      (B) 42      (C) $-18$      (D) $-6$      (E) 24 |