

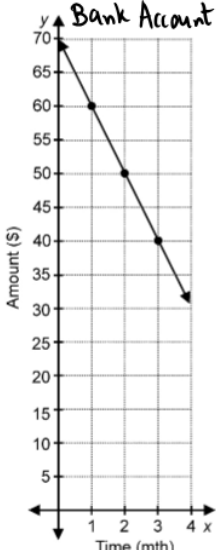
LINEAR SYSTEMS – journal questions – MPM

Summarize everything you need to know about these topics. Use examples and concise (not long – but with enough detail) explanations. Include definitions and diagrams if necessary

1. LINEAR RELATIONS review of gr 9

a) Explain how to solve an equation with fractions	b) Explain how to graph lines, show graph Using y-int and slope method $4x - 5y = 10$	c) Explain how to graph lines, show graph Using x-int and y-int method $4x - 5y = 10$
$\frac{3x}{2} - \frac{1}{4}(x+2) = 12 - \frac{2x+3}{3}$		

Explain and show how to find the **EQUATION of a LINE:**

d) Using slope and y-intercept form $y = mx + b$	e) Using slope-point form $y - y_0 = m(x - x_0)$	f) Using a graph <i>don't forget let statements for anything to do with real life.</i>	g) Using a word problem <i>set up only, explain to look for the 'per' number which will be slope</i>
Find the equation of a line if you're given two points (3, -8) and (-4, -5)	Find the equation of a line through point (2, 4) and perpendicular to $y = 3x - 5$		Brian's car costs him \$4000 plus \$0.20 per km every year. Write an expression for C, cost, to drive k, kilometers.

2. SOLVE SYSTEMS of two equations and two unknowns.

a) graphing method with steps and check $y = -2x + 5$ and $y = \frac{1}{2}x - 5$	b) substitution example with steps and check $x + 3y = 0$ and $-2x + y = 7$	c) elimination example with steps and check $3x + 2y - 1 = 0$ and $y = -x + 3$
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3. ANALYZE SOLUTIONS Illustrate how two lines can have the following number of solutions (use pictures and explanations)

a) Infinitely many solutions $y = 2x - 5$ $2y = 4x - 10$	b) No solutions $Y = 2x - 5$ $Y = 2x + 3$	c) One solution Create your own example
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4. WORD PROBLEMS Describe how to set up the word problems by including at least one example of each type

a) Geometry Problem Rectangular Garden, which has width 6 longer than length. Around the garden there is a 3m wide sidewalk. The area of the sidewalk is 160m ² . Set up equations for width and area of sidewalk.	b) Money problem One company charges \$150 set up fee and \$5.45/page. The other charges \$200 set up and \$4.10/page. Set up equations.	c) Mixture problem Start with 1050mL solution what is 20% acid. Add an unknown amount of 55% acid so that the final solution is 46% acid. Set up equations.
d) Age problem Alex is 8 year younger than Tiffany. Five years ago, Tiffany is twice as old as Alex. Set up equations.	e) Motion problem Kate drove to a bay for 5 hours and Dilan was going towards her for 8 hours when they meet. The total distance travelled is 300km. If Dilan drove 25km/hr slower, what were their speeds? Set up equations.	f) Wind/current problem A boat takes 4 hours to travel 52 km downstream and 10 hours against the current. Find the speed of the boat and current. Set up the equations.