Mathematics Quiz - Graphing and Trends

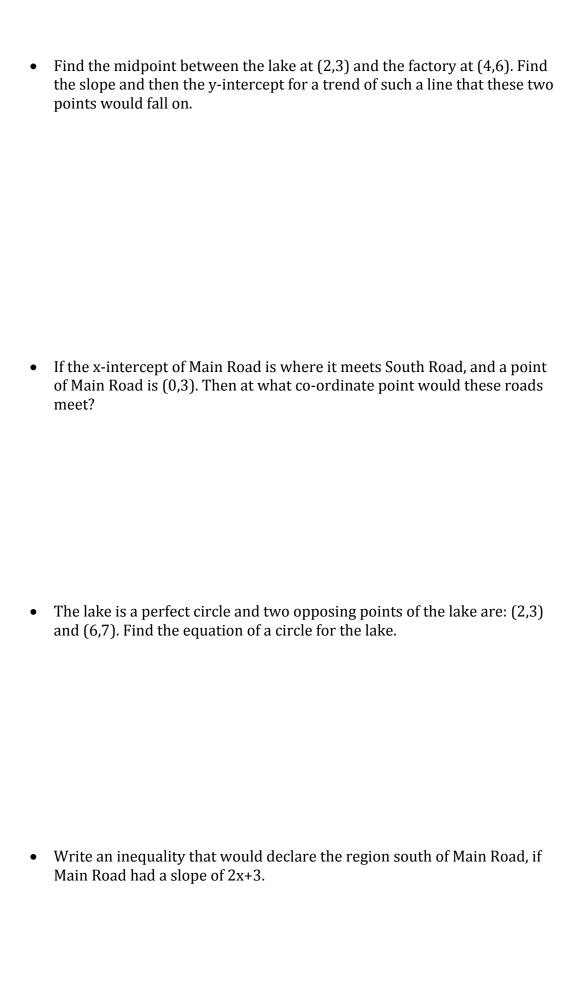
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You may use a graphing calculator (optional), a pen or pencil and a ruler.

• If the equation for Main Road in the town of Green Lake could be defined as 2x+3, what is the slope of the road? Explain.

• An ice-cream shop is at point (5,7) and a rival ice-cream shop is at point (7,9). What would be the most direct distance between them?

• A new proposed straight road will run through the town with the equation of 2x+5. Plot the graph that shows this.



•	On the nanoscale, gold can be a red or purple colour depending on the
	wavelength of photon that is absorbed. Through testing, it was found that
	sodium citrate reduces the size of nanoparticles and that smaller
	nanoparticles would absorb high energy (yet small wavelengths) of
	particles. If volume of Sodium Citrate was plotted as the independent
	variable against the absorbance of a wavelength in nanometers as the
	dependent variable, would the trend found be increasing or decreasing?
	Assume a linear trend.

CHALLENGE QUESTION (ATTEMPT)

• Deduce which line has the greatest length from these two inequalities if there are two rules about the domain of both of these lines; y <= 12 and y >= -6

Line A: $5 \ge 2x + 1$ **Line B:** $6 \le 3x + 1$

Hint: It may be worthwhile to plot these lines if you are in doubt!

Comments: