M10 - 8/9.0 - Systems Review

1) Find/How many Intersection/s?

a)

b)

Parallel

c)

Same Line
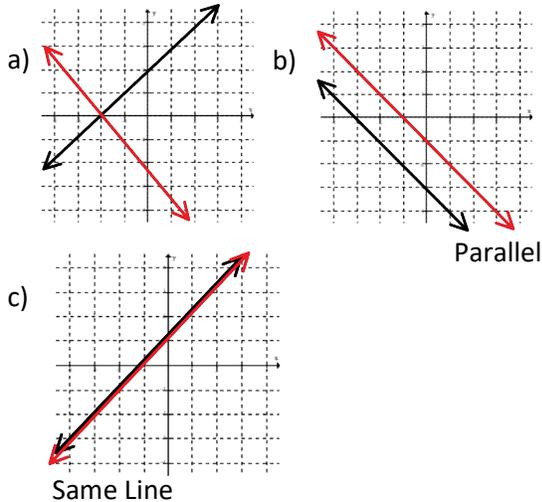
2) Is/Are the following point/s on the/both line/s?

$a)\ (2,3)$ & $y = x + 1$ & $y = -2x + 4$

$b)\ (-2,1)$ & $y - x = 3$ & $y + 5 + 3x = 0$

Yes

$c)\ (2,1)$ & $3x + 2y = 6$ & $x - 3 = y$

No

3) Find the number of solutions

$a)\ y = 2x - 3$ & $y = x + 4$

$b)\ y = 3x - 8$ & $y = 3x + 2$

$c)\ y = x + 1$ & $y = x + 1$

$d)\ 2x - y - 3 = 0$ & $x - y + 4 = 0$

$e)\ 6x - 2y = 16$ & $6x - 2y + 4 = 0$

4) Solve by Substitution and Graphing & Check Solution

$a)\ y = (x + 1)$ & $y = (-2x + 4)$

$b)\ x = (3 - y)$ & $2y - 2x = 10$

$c)\ 2y = 2x - 6$ & $y = x - 3$

$d)\ \frac{1}{2}x + 1 = y$ & $2y + x = 4$

$e)\ y = 2x + 5$ & $y = 2x + 1$

5) Solving by Elimination and Graphing & Check Solution

$a)\ 2y = x - 2$ & $y = x - 3$

$b)\ y + x = 6$ & $y - x = 4$

$c)\ y = -6x + 2$ & $y + 4x = 0$

$d)\ 2x - 3y = 2$ & $x + 2y = 8$

$e)\ 3y + x = 4$ & $0.5y + \frac{x}{3} = 3$

(14,-10/3)

$f)\ 2x + 7y = 16$ & $3x + 5y = 13$

LCD (1,2)

6) Which plan would you choose and why?

Cell Phone Plans   Plan A

Plan C   (80,80)

(120,80)

Plan B

(40,20)

Gigabytes
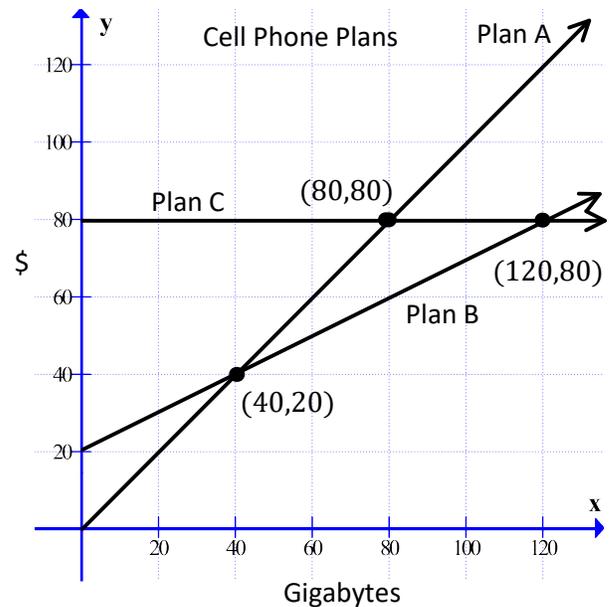
7) Grade 8/9
a) The sum of three numbers is 67. The 2nd number one less than is twice the 1st. The 3rd number is four more than the 1st.
b) The sum of three consecutive integers is 24.
c) Find two consecutive odd integers where five less than triple the 2nd is quadruple the 1st.
d) The sum of two numbers is 9 and the difference is 31. Find the numbers.

8) Now/Then
a) Four years less than triple Mark's age equals fourteen years more than double his age. How old is Mark?
b) If Nicole were triple her age she was three years ago she would be twice her current age. How old is Nicole now?

9) Geometry
a) The perimeter of a rectangle is 44 cm. Find the length and the width if one dimension is 2 cm longer than the other.

10) y=mx+b Money in the bank
Keira has $2 in the bank and saves $0.50 per day. Brian has $11 in the bank and spends $1 a day.
a) Find the equations and intersections and graph and Interpret the intersection and describe the domain below and above.

11) Phone companies
One cell phone company charges $80 for unlimited gigabytes. Another cell phone company charges $1 per gigabyte. Another cell phone company charges$20 per month plus $0.50 per gigabyte.
a) Find the equations and intersections and graph and which company would you choose over what domain?

Ax+by=c
12) Money
a) A person has 16 total coins of Dimes and Loonies worth $8.80, How many Dimes and Loonies do they have?
b) A person has 22 total coins of Quarters and Dimes worth $5.20, How many Quarters and Dimes do they have?

13) Mixtures
a) As scientist wants to make 50 L of a 40% acid solution. They mixed together a 30% acid solution with the 70% acid solution. How many litres of each solution must the scientist mix?
b) A person spends $17.40 on 12 kg of bulk Candy at $1.20/kg and $1.80/kg? How much did they spend on each?

14) Investment/Mixtures
a) Mason invests a total of $2800 in a 12% bond and an 8% bond earning $288. How much did he invest in each?
b) If you mix 6% alcohol with 8% alcohol, how much of each should you mix to have a total of 10 liters at 7.4%.

15) Adult tickets for the soccer game are $12 and children's tickets are $6. If the soccer game has 100 attendees, and does $966 in revenue how many of each adult tickets and children tickets are sold.

16) Velocity/Distance/Time
a) A plane averages 115 kilometres per hour in One Direction with a tailwind and 85 kilometres per hour on the return trip into the wind. Find the speed of the plane in still air.
b) A boat took six hours to sail downwind with the wind speed of 12 kilometres per hour. The return trip against the wind took 10 hours. Find the distance the boat traveled.
c) A boat took 3 hrs to travel 24 km with a current and 5 hrs to return. What is the speed of the boat in still water?

17) A truck travels 500 kilometres in the same time a car travels 400 kilometres. The truck travels 10 kilometres per hour faster than the car. How fast is the car?

18) y=mx+b
A helicopter drops a parachute of medical supplies from a height of 800 meters to a building 100 m tall and falls at 10 meters per second. When will it reach the building?

19) 2 Points
Typically the cost of making something includes a unit cost plus a fixed cost.
a) One day of the week a pizza store makes 100 pizzas and cost $550. Another day 200 pizzas and costs$1050. Find the cost to rent the store for a day.