MPM 1D9 | **Semester 2, 2016 - 2017**

Grade 9 Pre-AP Math
Linear Systems Very Minor Test

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Victim: Mr. Solutions

KU	APP	COM
/10	/10	/5

1. Solve the given linear system both algebraically and graphically. **(10 KU)**

$$\begin{cases} 2x+3y=12 & (1) \\ 3x-2y=5 & (2) \end{cases}$$

(1)×3, $6x+9y=36$ (3)

(2)×2, $6x-4y=10$ (4)

(3)−(4), $13y=26$

$\therefore y=2$

Sub. in (1),

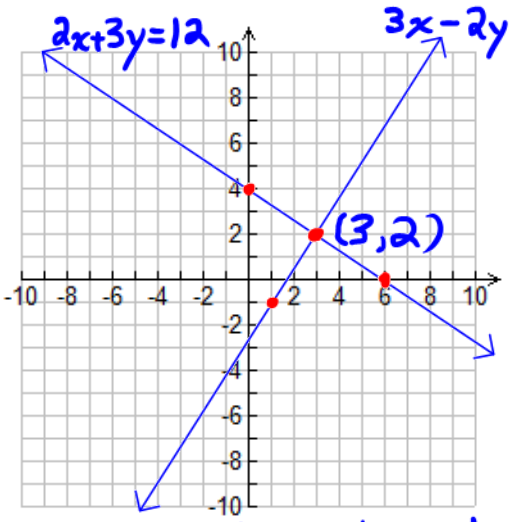
$2x+3(2)=12$

$2x+6=12$

$2x=6$

$x=3$

$x=3,\ y=2$



Since the lines intersect at (3,2), the solution to the system is $x=3$, $y=2$.

2. Lia walks to the mall from her house at 5 km/h. Ten minutes later, Lia's sister Megan starts riding her bike at 15 km/h (from the same house) to the mall to meet Lia. They arrive at the mall at the same time. How far is the mall from their house? How long did it take Megan to get there? **(10 APP)**

Lia → 5 km/h

Meghan → 15 km/h, 10 minutes later } Arrive at mall at same time.

l → time (in h) that it takes Lia to walk from home to the mall

m → " " " " Meghan " ride " " " " "

$v=\frac{d}{t} \rightarrow d=vt$

① Lia's time = 10 more minutes than Meghan's = $\frac{1}{6}$ h more than Meghan's

② Lia's distance = Meghan's distance

$l=m+\frac{1}{6}$ (1)

$5l=15m$ (2)

Sub (1) into (2)

$5(m+\frac{1}{6})=15m$

$\therefore 5m+\frac{5}{6}=15m$

$\therefore -10m=-\frac{5}{6}$

$-6(-10m)=\frac{-6}{1}(\frac{-5}{6})$

$60m=5$

$m=\frac{5}{60}=\frac{1}{12}$

$l=\frac{1}{12}+\frac{1}{6}=\frac{3}{12}=\frac{1}{4}$

Meghan → 5 minutes

Lia → 15 minutes