

MDM4U - Review Questions

$$1 \quad c. \quad \frac{2}{4} \left(\frac{2x-5}{2} \right) = \frac{1}{4} \left(\frac{3x-1}{4} \right)$$
$$4x-10 = 3x-1$$
$$x = 9$$

$$\left\{ \begin{array}{l} 2 \left(\frac{x}{2} \right) = (3) 2 \\ x = 6 \end{array} \right.$$

$$2 \quad c. \quad 3x(x-5)^2 =$$
$$= 3x(x-5)(x-5)$$
$$= 3x(x^2 - 10x + 25)$$
$$= 3x^3 - 30x^2 + 75x$$

7. Tung studies the types of vehicles driving by his house and records the results in a table.

Type	Frequency
Car	12
Minivan	10
Sport Utility	6
Pickup	6
Truck / Van	4
Other	2

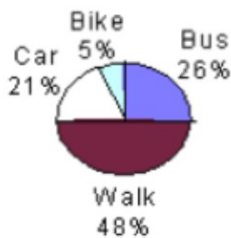
Total = 40

Tung wants to create a circle graph to represent the data. Determine the measure of the sector angle for the Pickup category.

Pickup Trucks $\frac{6}{40} \times 360^\circ = 54^\circ$

8. Students at a high school were asked how they travel to school each day. The results are summarized in the following circle graph.

How Students Travel to School



If 208 students take the bus, determine the number of students who walk to school.

$$x(0.26) = 208$$

$$x = \frac{208}{0.26}$$

$$= 800$$

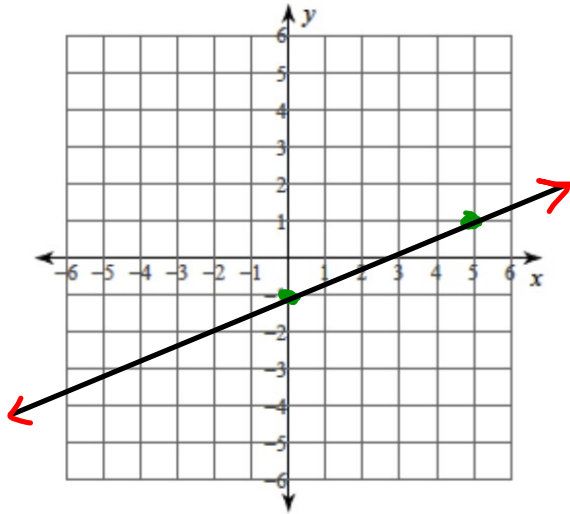
\therefore 800 students total

$$800(0.48)$$

$$= 384$$

\therefore 384 students walk to school

3) $2x - 5y = 5$



$$\left\{ \begin{array}{l} y = mx + b \end{array} \right.$$

$$2x - 5y = 5$$

$$-5y = 5 - 2x$$

$$y = \frac{1}{-5}(5 - 2x)$$

$$y = -1 + \frac{2}{5}x$$

$$y = \frac{2}{5}x - 1$$

↪ y-int

Find the equation for a line..

15) through: $(4, -2)$, slope = -1

$$y = mx + b \quad m = -1$$

Sub in $(4, -2)$ & $m = -1$

$$-2 = -1(4) + b$$

$$-2 = -4 + b$$

$$2 = b$$

$$\therefore y = -x + 2$$

18) through: $(0, 4)$ and $(-1, -1)$

↗
y-int!
 $b = 4$

Sub in $b = 4$ & $(-1, -1)$

$$-1 = m(-1) + 4$$

$$-1 - 4 = -m$$

$$-5 = -m$$

$$5 = m$$

$$\therefore y = 5x + 4$$

23. While in the arena, Katniss must escape an approaching forest fire. She later wants to trace out the path of escape she took. She draws a Cartesian Plane (an x and y axis) over a map of the arena with the origin located at the Cornucopia. She finds that the forest fire had a trajectory of $6x + 10y - 1 = 0$, she ran perpendicular to this and intersected the y-axis at the same place as the line $3x + 2y = 6$. Below is her calculations to determine the equation of the line for her escape. Determine her errors and show the correct solution.

Katniss's Solution	Identify Errors and Corrections
$6x + 10y - 1 = 0$ <p style="text-align: right; color: red;">FIRE</p> $10y = -6x + 1$ $y = -\frac{3}{5}x + \frac{1}{10}$ $\therefore m = -\frac{3}{5}$ $3x + 2y = 6$ $2y = -3x + 6$ $y = -\frac{3}{2}x + 3$ $\therefore b = 3$ $\therefore \text{the eq'n of the line of my escape is}$ $y = -\frac{3}{5}x + 3$	<p style="color: red;">Want \perp to this</p> $m = \frac{5}{3}$ $b = 3$ <p style="color: red;">mistake</p> $\therefore y = \frac{5}{3}x + 3$

27. Rheanna has \$250 in a savings account that earns 2% interest, compounded monthly. How much interest will she earn in 3 years?

$$A = P(1+i)^n \quad \leftarrow \quad \begin{aligned} n &= 12(3) \\ &= 36 \end{aligned}$$

$\uparrow \quad i = \frac{0.02}{12}$

$$\begin{aligned} A &= 250 \left(1 + \frac{0.02}{12} \right)^{36} \\ &= 265.44 \end{aligned}$$

\therefore She will earn
\$15.44 in
interest.