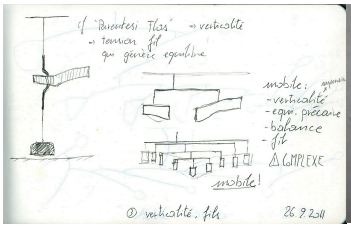
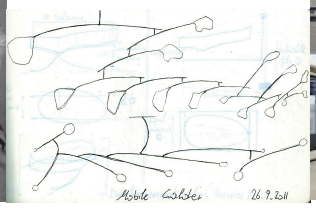
Name: Rebecca

Long Term LT: I can analyze and solve linear equations and pairs of simultaneous linear equations (8.EE.7-8). This means I can…(1) solve systems of two linear equations algebraically using the distributive property and collecting like terms and (2) solve systems of two linear equations graphically using the point of intersection of their graphs.

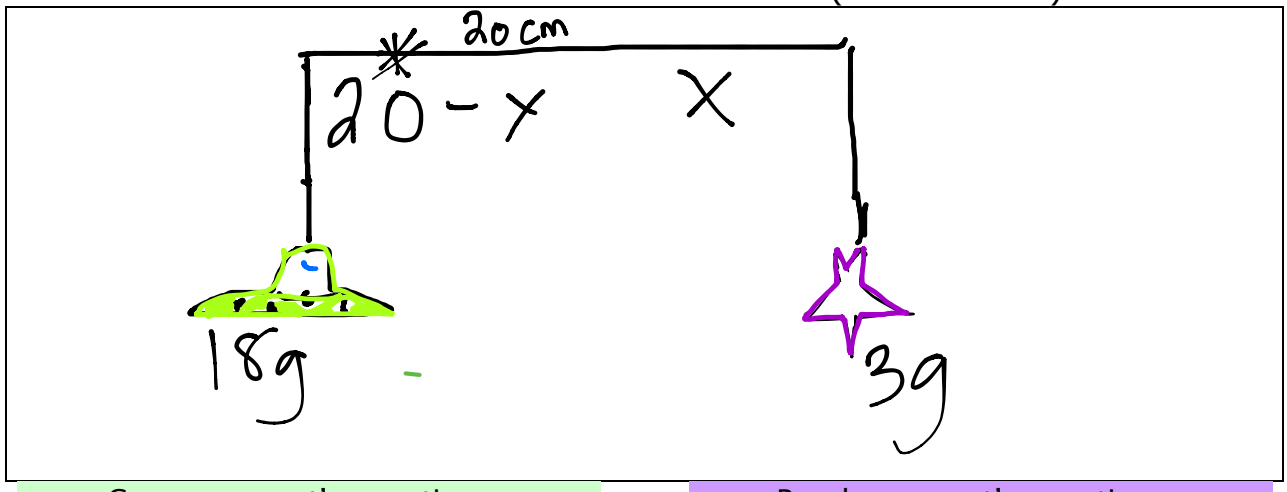
Alexander Calder-Artist & Engineer of Kinetic Sculpture (the mobile)






TASK 1: CREATE A SCHEMATIC OF YOUR MOBILE INCLUDING

- Length of rod (cm)
- Sketch of ornaments
- Weight of ornaments (g)
- Predicted location for center of moments to create balance (*)
- Distance of ornaments to center of moments (in terms of x)



Green moment's equation =

$y = 18(20 - x)$

$y = 360 - 18x$

$y = -18x + 360$

Purple moment's equation =

$y = 3x$

TASK 7 SOLVE FOR DELICATE BALANCE: GRAPHICALY

Green moment's equation y=mx+b	Purple moment's equation y=mx+b
$y=-18x+360$	$y=3x$

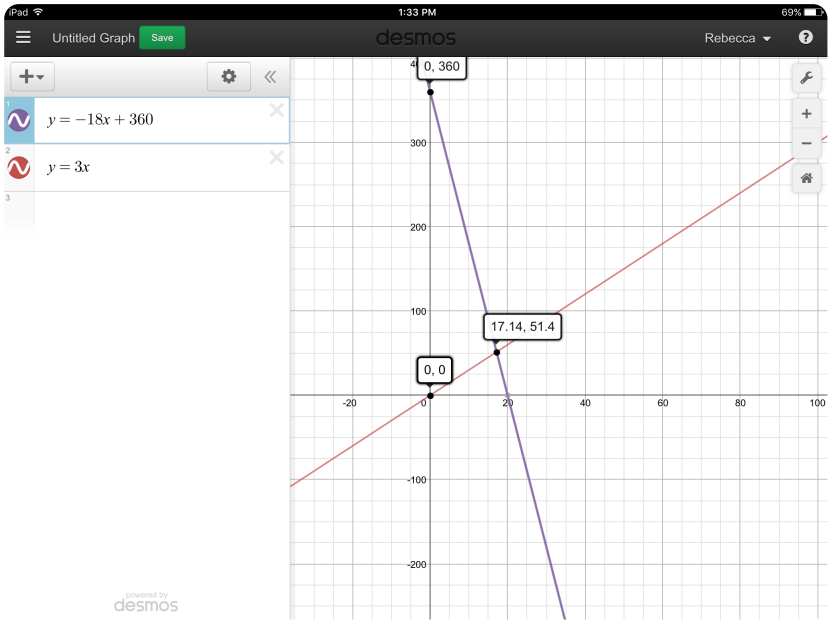
At what distance (x) from the right end of the rod will the center of moments be located to create equal moments?

17.14

What will be the magnitude of moments (y) when balance is achieved?

51.4

Insert screen shot showing this solution.



TASK 3: EXPLAIN Y=MX+B

Variable	Meaning	Explanation in context of Alexander Calder Mobiles
Y	Output	The magnitude of the moment or twisting force
M	Slope	M=____ -18 is the slope this means the twisting force decreases by 18 gcm everytime the center moves 1cm left.
X	Input	The distance of the center of moments from the right end of the rod.
B	y-intercept	B=_____ When x=0 the twisting force is 360

Variable	Meaning	Explanation in context of Alexander Calder Mobiles
Y	Output	This is the strength of the twisting force
M	Slope	M=3 is the slope this means the twisting force increases by 3 every time the center moves 1cm left.
X	Input	X is distance from right end of the rod.
B	y-intercept	B=____When x=0 the twisting force = 0gcm

TASK 4 SOLVE FOR DELICATE BALANCE: ALGEBRAICALLY

Green moment's equation y=mx+b	Purple moment's equation y=mx+b
$y=-18x+360$	$y=3x$

At what distance from the right end of the rod will the center of moments be located to create equal moments?

$$-18x+360=3x$$

$$360=21x$$

$$21x$$

$$x=17.14$$

Solve for the magnitude of the green moment (y) when x = _____	Solve for the magnitude of the purple moment (y) when x=_____
$-18\times17.14+360$ $=51.4$	3×17.14 $=51.42$