

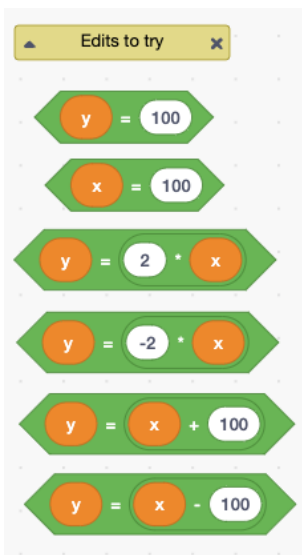
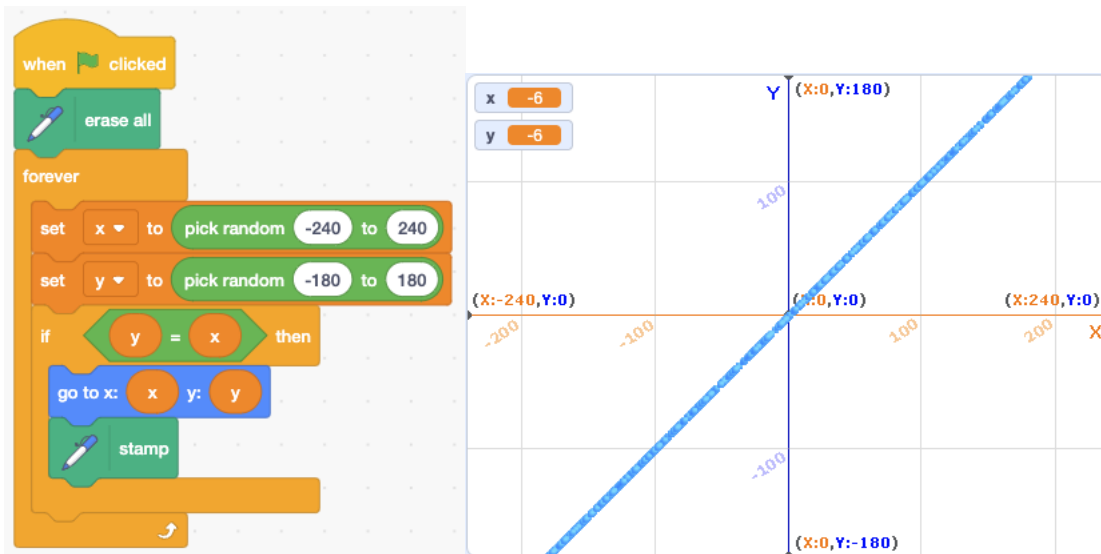
PLT – SESSION 1 FOLLOW-UP

1. Playing with Linear Relationships in Scratch
2. Solutions to the 6 Questions discussed in Session 1

Playing with Linear Relationships in Scratch

Go to <https://scratch.mit.edu/projects/556330557/editor/>

- Run the code to see the output
- Make the edits shown below to see what changes
- If you “mess-up”, refresh the browser to start over



How does the direction and slope of the graph change?

- What causes this change?

How does the y-intercept change?

- What causes this change?

[the y-intercept is where the graph crosses the y or vertical axis]

Solutions to the 6 Questions discussed in Session 1

SAMPLE GRADE 9 EQAO TEST

<https://dwod99k06nyqh.cloudfront.net/#/en/test-auth/g9-sample/340/adaptive>

STAGE 1

Question 1

Flag this question.

One of these tables of values shows information about a linear relationship between distance and time.

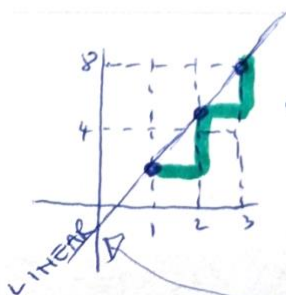
Which table of values shows this relationship?

Time (s)	Distance (m)
1	1
2	3
3	6

Time (s)	Distance (m)
1	1
2	4
3	9

Time (s)	Distance (m)
1	2
2	5
3	8

Time (s)	Distance (m)
1	2
2	4
3	8



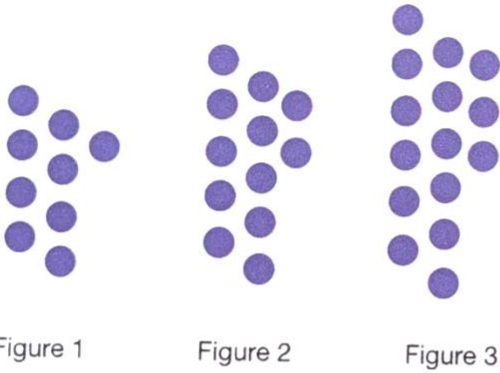
STAIRCASE
= EQUAL SIZE STEPS
= LINEAR RELATIONSHIP

EXTRA
equation $y = mx + b$
 $y = 3x - 1$
slope
y-intercept

Question 4

Flag this question.

If y represents the number of circles in the figure and x represents the figure number, what is the equation of this pattern?



$$y = 3x + 6$$

$$y = -3x + 6$$

$$y = 3x + 9$$

$$y = -3x + 9$$

x FIGURE	y CIRCLES
1	9
2	12
3	15

METHOD

①

RATE OF CHANGE

= SLOPE

= 3

EQUATION

$$y = mx + b$$

$$y = 3x + b$$

WHEN $x = 1$ (FIGURE = 1)

$$9 = 3x + b$$

$$9 = 3(1) + b$$

$$9 = 3 + b$$

$$6 = b$$

$$y = 3x + 6$$

METHOD
②

for $x = 1, y = 9$

$$y = 3x + 6$$

$$9 = 3 + 6 \quad \checkmark$$

$$9 = 9$$

$$y = -3x + 6$$

$$9 = -3 + 6$$

$$9 = 3 \quad \times$$

$$y = 3x + 9$$

$$9 = 3 + 9$$

$$9 = 12 \quad \times$$

$$y = -3x + 9$$

$$9 = -3 + 9$$

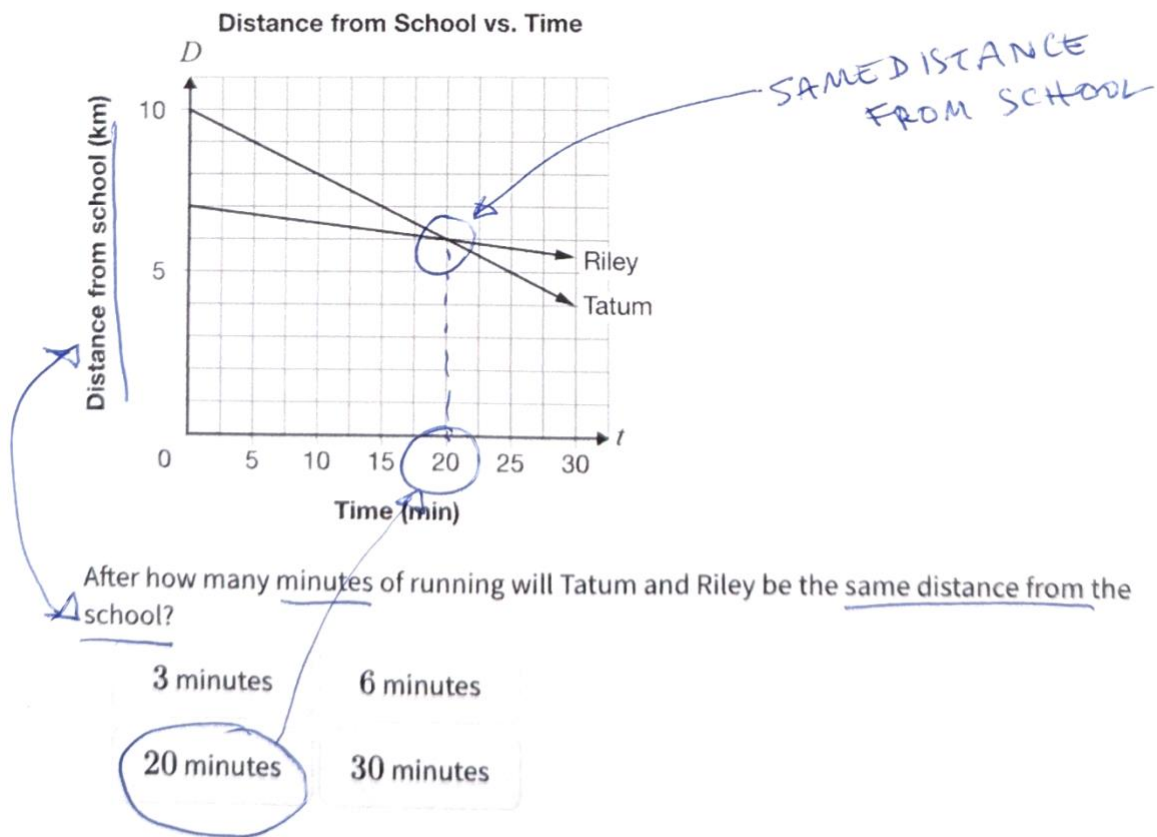
$$9 = 6 \quad \times$$

Question 14

Flag this question.

Tatum and Riley are both running along the same path.

This graph represents their distances from the school, D , in kilometres, and their time spent running, t , in minutes.



STAGE 2

Question 1

Flag this question.

The total cost for a cheese pizza is \$14.50, plus \$1.25 for each topping.

Which equation represents the relationship between the total cost, C , in dollars, and the number of toppings, n ?

$$C = 1.25n$$

$$C = 15.75n$$

$$C = 1.25n + 14.50$$

$$C = 14.50n + 1.25$$

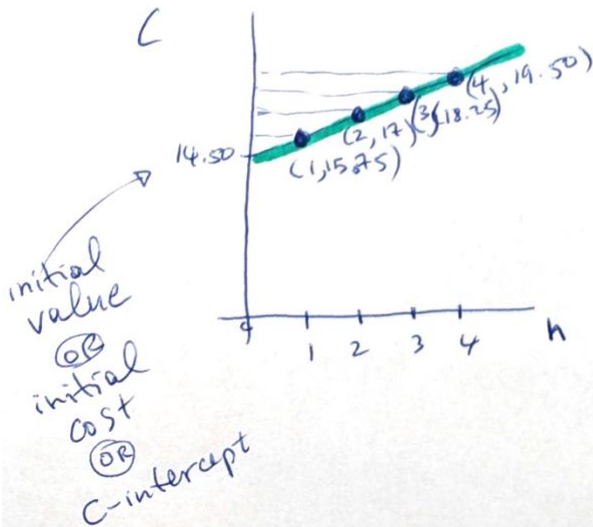
$C =$ cost of pizza

$n =$ # of toppings

$$C = 1.25n + 14.50$$

↑
rate
or
slope

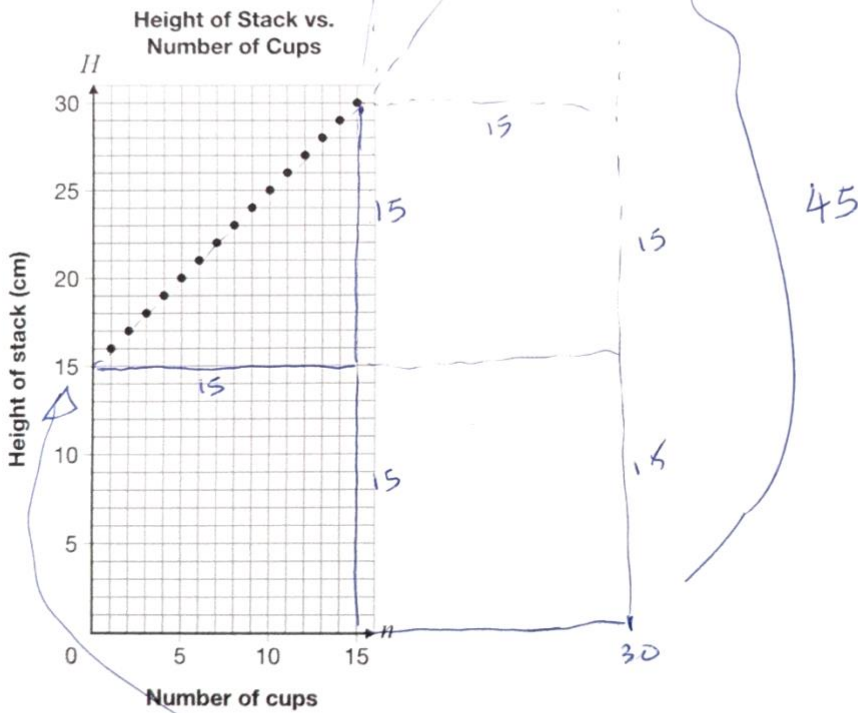
↑
initial
cost
(a constant)



Question 2

Flag this question.

Paper cups are piled in a stack. This graph shows the relationship between the height of the stack and the number of cups.



Based on this data, what is the height of a stack of 30 cups?

45 cm

60 cm

120 cm

480 cm

OR

$$y = mx + b$$

$$= 1x + 15$$

$$= x + 15$$

When $x = 30$

$$y = 30 + 15$$

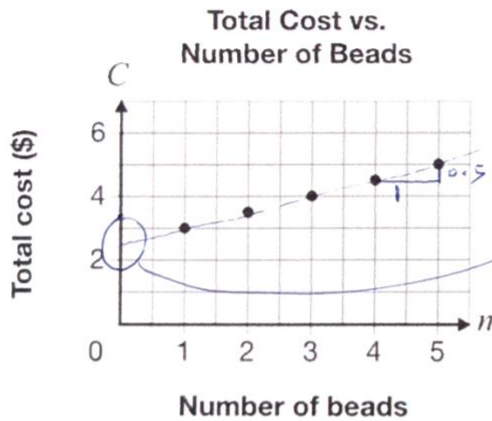
$$= 45$$

Question 7

Flag this question.

The total cost of a bracelet, C , in dollars, is made up of a cost for the string and a cost per bead, n .

Information about this linear relation is shown on the graph.



initial value = 2.50
slope = $\frac{0.5}{1}$
= 0.5

$$C = 0.5n + 2.50$$

Which option shows only information about this linear relation?

$$C = 2.50 + n$$

$$C = 3 + 0.5n$$

Number of beads	Total cost (\$)
0	3.00
2	3.50
4	4.00

Number of beads	Total cost (\$)
0	2.50
2	3.50
4	4.50