

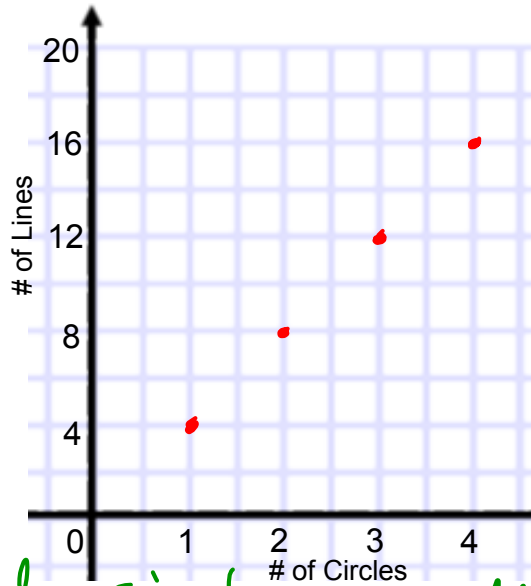
5. Zenaïd looks at the pattern.



He writes the ordered pairs relating the number of circles to the number of lines (1, 4), (2, 8), (3, 12), (4, 16).

- a) Complete a table of values using the ordered pairs.
- b) Plot the points on a grid.
- c) Describe the pattern.

# Circles	# Lines
1	4
2	8
3	12
4	16



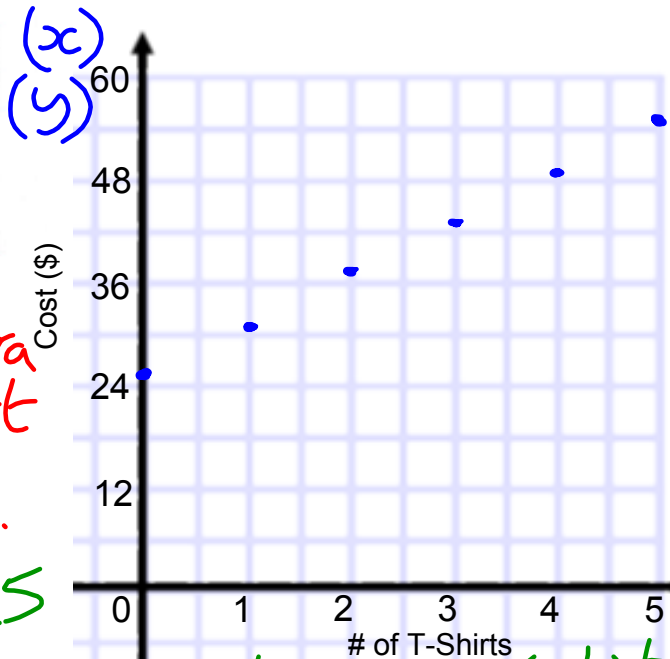
For each additional circle, we add four more lines.

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6. A camp counsellor buys T-shirts for his campers. The total cost of up to six T-shirts is shown. He pays a \$25 fee to have the T-shirts designed.

Number of T-shirts	0	1	2	3	4	5
Total Cost (\$)	25	31	37	43	49	55

- a) Plot the ordered pairs on a grid.
- b) Describe the relationship between the total cost and the number of T-shirts.
- c) Write an equation modelling the total cost. Define your variables.

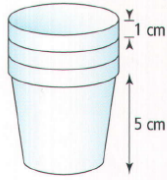


b) For each extra T-shirt the cost increases by \$6.

c)  $C = 6t + 25$   
 Let  $C =$  Total cost in \$,  $t =$  # of shirts

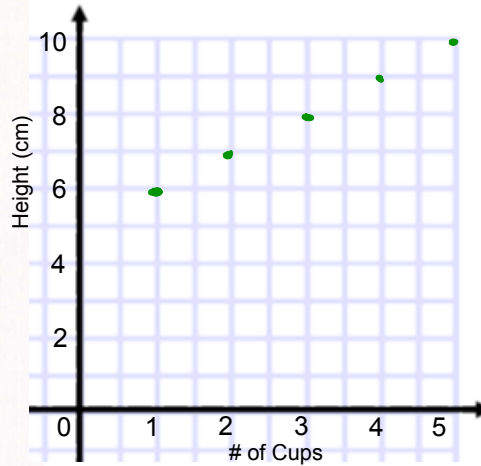
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7. Hari measures the heights of stacked plastic cups.



She records her results.

Number of Cups	1	2	3	4	5
Height (cm)	6	7	8	9	10



- a) Plot the ordered pairs on a grid.
- b) Describe the relationship between the number of cups and the height of a stack.
- c) Develop an equation to model the height of a stack of cups.
- d) What is the height of a stack of 40 cups?

b) Increasing by 1 cm for each extra cup added.

c)  $h = n + 5$   
 Let  $h =$  height of stack in cm  
 and  $n =$  # of cups.

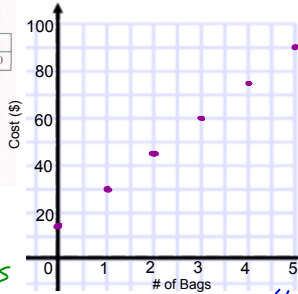
d)  $h = 40 + 5$   
 $h = 45$  cm

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8. Len buys baseball caps for the geography club. He pays the designer a \$15 set-up fee. The cost for up to five bags of caps is shown.

Number of Bags	0	1	2	3	4	5
Cost (\$)	15	30	45	60	75	90

- a) Plot the ordered pairs on a grid. Justify your choice of scale on each axis.
- b) Use a formula to find the cost of eight bags of baseball caps.
- c) There are five baseball caps in each bag. Describe how to find the price per baseball cap for 5 to 12 caps.



b)  $C = 15n + 15$   
 Let  $C =$  cost in \$  
 and  $n =$  # of bags

$C = 15(8) + 15$  5 caps = 1 bag (\$30)  
 $C = 120 + 15 \Rightarrow 1 \text{ cap} = 30 \div 5$   
 $C = \$135$  = \$6

6 caps = 2 bags (\$45) 7 caps = 2 bags (\$49)  
 $\Rightarrow 1 \text{ cap} = 45 \div 6$  1 cap =  $45 \div 7$   
 = \$7.50 = \$6.43

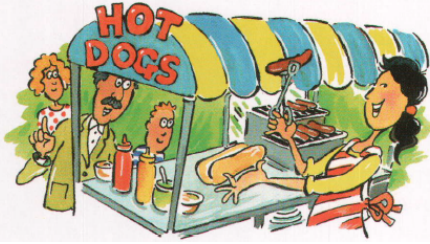
8 caps = 2 bags (45) 9 caps = 2 bags (45)  
 1 cap =  $45 \div 8$  1 cap =  $45 \div 9$   
 = \$5.63 = \$5

10 caps = 2 bags (45) 11 caps = 3 bags (60)  
 1 cap =  $45 \div 10$  1 cap =  $60 \div 11$   
 = \$4.50 = \$5.45

12 caps = 3 bags (60)  
 1 cap =  $60 \div 12$   
 = \$5

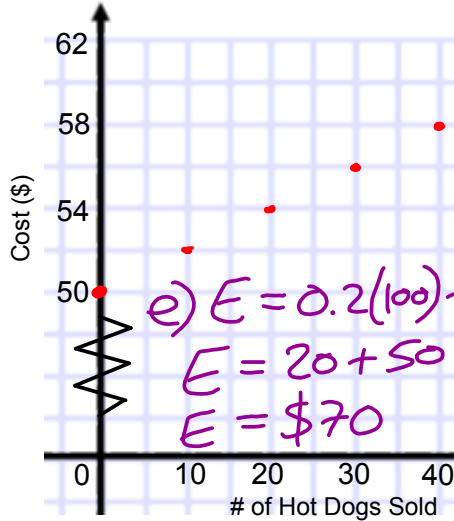
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9. Adriana works at a hot dog stand. She earns \$50 per day, plus \$0.20 per hot dog sold.



a) Copy and complete the table of values showing Adriana's earnings.

Number of Hot Dogs Sold per Day	Adriana's Earnings (\$)
0	50
10	52
20	54
30	56
40	58



b) Plot the ordered pairs on a grid.

c) Describe the relationship between Adriana's earnings and the number of hot dogs sold.

d) Express the relationship as an equation.

e) Adriana sells 100 hot dogs one day. How can you find her earnings that day?

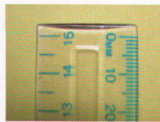
e)  $E = 0.2(100) + 50$   
 $E = 20 + 50$   
 $E = \$70$

c) Earnings increase by \$0.20 for each hot dog.

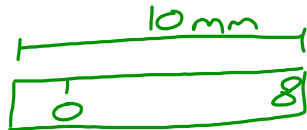
d)  $E = 0.2d + 50$   
 $E = \text{Earnings}$   
 $d = \# \text{ of hot dogs}$

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10. Most rulers start the zero line inside the edge of the ruler. One ruler starts the zero line 2 mm inside the edge.

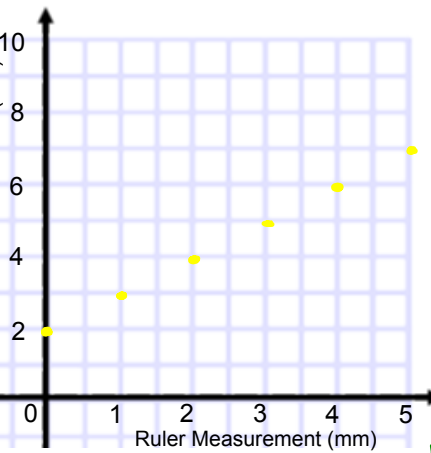


- Use pictures, words, and numbers to show the relationship between accurate measurement readings and measurements taken right from the edge of a ruler.
- Develop an equation to model the relationship.
- Create a table of values for your equation. Then, plot the points on a grid.



Actual measurement equals ruler measurement plus two.

Ruler	Actual
0	2
1	3
2	4
3	5
4	6



$r = a + 2$   
 Let  $r = \text{length on ruler}$  and  $a = \text{actual length}$ .

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