

Variables That Change Together: Input and Output

Grade 6 math · Test · Standards: 6.EE.C.9

Name: _____ Date: _____ Class: _____

This test checks standard 6.EE.C.9. Answer every question and show the equation or substitution behind each answer. Calculators are not needed. The test is worth 20 points and should take 45 minutes.

Standards: 6.EE.C.9 · **Level:** Grade 6

Time: 45 minutes · 8 questions · Total: 20 points · Calculator: as allowed by your teacher

Question 1 Identify the variables (2 points)

Name the independent variable and the dependent variable in each situation.

- The hours a bike is rented and the rental cost. (1 point)
- The seconds a sprinter has been running and the distance covered. (1 point)

Question 2 Complete the table (2 points)

A scooter rental costs $y = 6.5x$ dollars for x hours. Complete the table.

x	2	4	10
y	?	?	?

(2 points)

Question 3 Equation from a table (3 points)

The table shows a relationship between x and y .

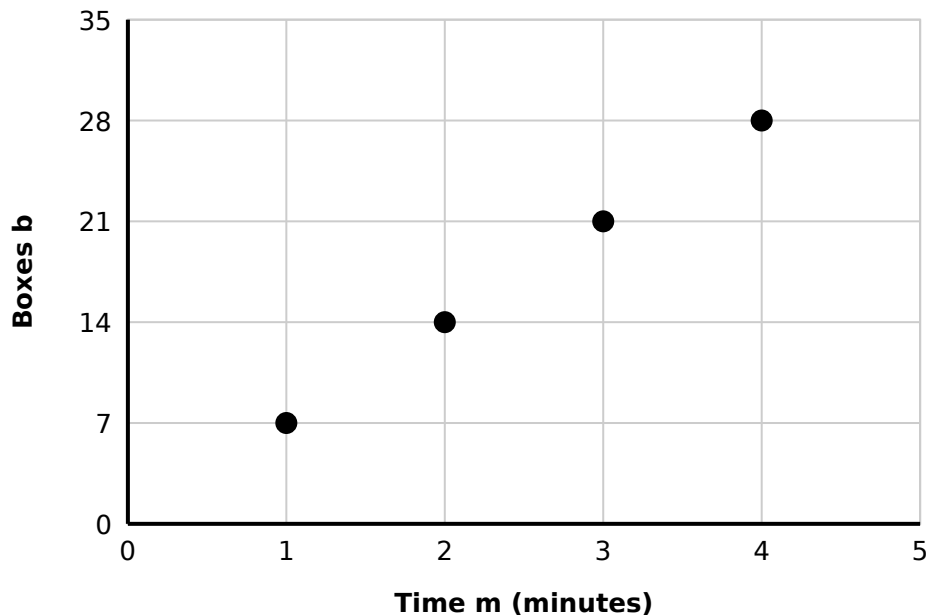
x	3	5	8	10
y	21	35	56	70

- Write an equation for y . (1 point)
- Find y when $x = 15$. (1 point)

c. Find x when $y = 161$. (1 point)

Question 4 Conveyor belt graph (3 points)

The graph shows the boxes b moved by a conveyor belt in m minutes.



Boxes moved by a conveyor belt.

- Write an equation for b . (1 point)
- Explain what the point $(3, 21)$ means. (1 point)
- Find the boxes moved in 12 minutes. (1 point)

Question 5 Car wash fundraiser (3 points)

A car wash charges \$8.50 for each car. Let n be the number of cars and r the revenue in dollars.

- Name the independent variable and the dependent variable. (1 point)
- Write an equation for r . (1 point)
- Find the revenue from 26 cars. (1 point)

Question 6 An age difference (2 points)

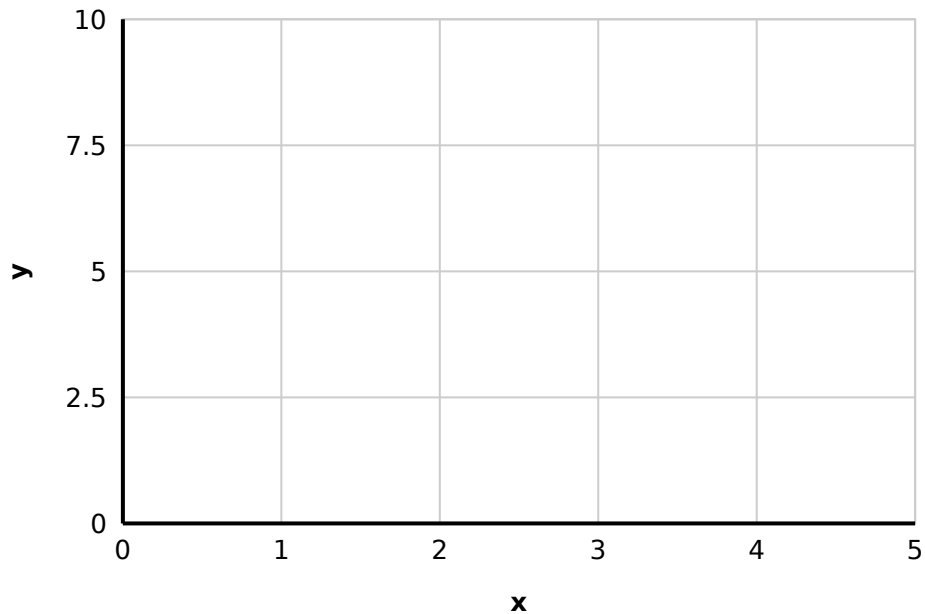
Ella is 8 years older than her cousin Noor. Let n be Noor's age and e be Ella's age.

- Write an equation for e . (1 point)
- Find Ella's age when Noor is 31. (1 point)

Question 7 Graph the pairs (2 points)

Plot the ordered pairs from the table on the grid, then write an equation for y .

x	1	2	3	4
y	2.5	5	7.5	10



(1 point for the graph, 1 point for the equation)

Question 8 Kayak rental (3 points)

Kayak rental at a lake costs \$15 per hour. Let h be the hours and k the cost in dollars.

- Find the cost for 2.5 hours. (1 point)
- Dara paid \$105. Find how many hours she rented. (1 point)
- Another shop charges \$12 per hour. Find how much less Dara would pay there for the same time. (1 point)