

Dependent and Independent Variables: math test solutions, Grade 6 – download the PDF

Test solutions with the detailed point scale. Add up your points and spot what to review.

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 Identify the variables

/ 3 pts

- a. Independent: hours. Dependent: gallons used. (1 pt)
- b. Independent: number of players. Dependent: number of bottles. (1 pt)
- c. Independent: speed. Dependent: distance traveled in one hour. (1 pt)

2 Smoothie bar

/ 4 pts

a. $c = 7n$. (1 pt)

b.

n	2	4	6	8
c	14	28	42	56

(1 pt)

c. $c = 7 \times 11 = 77$ dollars. (1 pt)

d. $7n = 91$, so $n = 13$ smoothies. (1 pt)

3 Find the rule

/ 3 pts

a. Each output is 5 more than its input: $y = x + 5$. (1 pt)

b. $y = 20 + 5 = 25$. (1 pt)

c. The rate of change is 1. The graph is not through the origin because $x = 0$ gives $y = 5$, not 0. (1 pt)

4 Planting tulips

/ 4 pts

a. The number of hours n is independent and goes on the horizontal axis. (1 pt)

b. The points go up by 8 for each hour: 8 bulbs per hour. (1 pt)

c. $b = 8n$. (1 pt)

d. $b = 8 \times 6 = 48$ bulbs. (1 pt)

5 Constant rate or not?

/ 3 pts

- a. Table A goes up by 3 each time, so the rate is 3. (1 pt)
- b. Table B goes up by 3, then 4, then 5. These changes differ. (1 pt)
- c. Table A: $y = 3x$, so $k = 3$. (1 pt)

6 Renting a bus

/ 3 pts

- a. $c = 12r + 40$. (1 pt)
- b. $c = 12 \times 5 + 40 = 100$ dollars. (1 pt)
- c. $12r + 40 = 172$, so $12r = 132$ and $r = 11$ riders. (1 pt)



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