LESSON MAKER PRO

Graph Point Stories

Read proportional points in context.

CCSS.Math.Content.7.RP.A.2d · Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.

Name _____ Date _____

WHAT A POINT SAYS

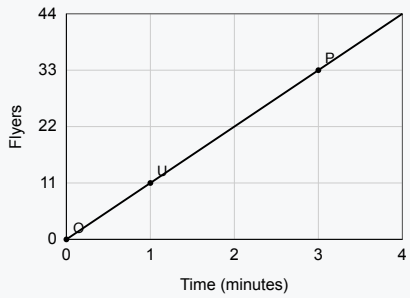
Read the axis labels before interpreting a point. In a proportional relationship, (x, y) matches the quantity on the horizontal axis with the quantity on the vertical axis. The origin means zero of each. The point (1, r) gives the amount r per one x-unit.

Worked example

A printer makes y = 11x flyers, where x is minutes. Explain (3, 33).

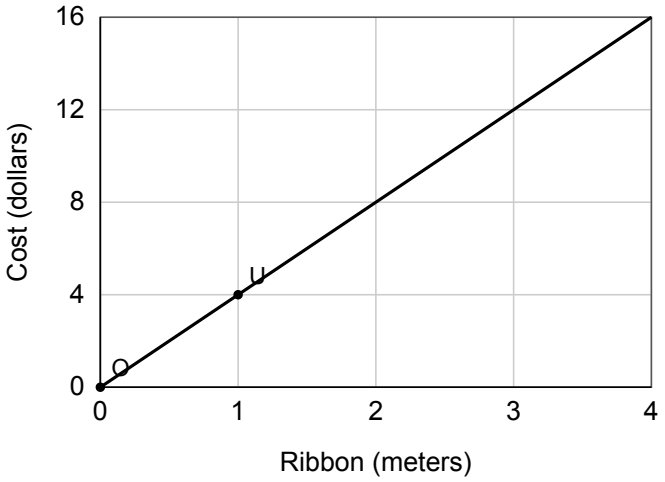
1. x = 3 minutes.
2. y = 11 x 3 = 33 flyers.
3. The point matches 3 minutes with 33 flyers.

(3, 33) means the printer makes 33 flyers in 3 minutes.



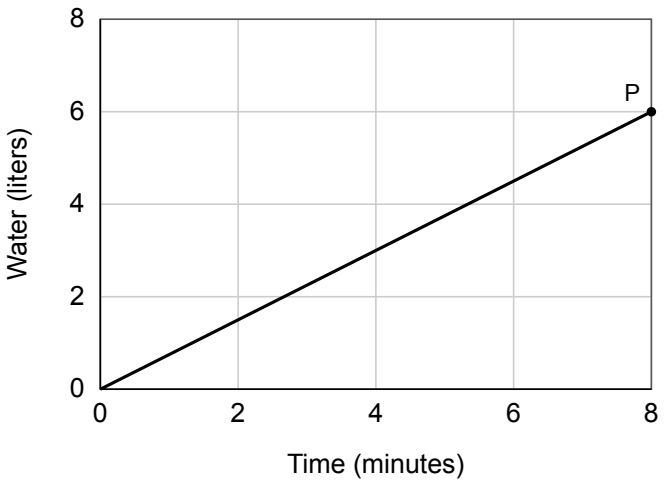
1. Practice

A ribbon costs $4 per meter. Explain the graph points O = (0, 0) and U = (1, 4) in context.



2. Practice

A tank receives 3/4 liter per minute, so y = (3/4)x. Explain P = (8, 6) using the labeled graph.



3. Practice

Each movie ticket costs $7. x is tickets and y is cost. What does (5, 35) mean?

4. Practice

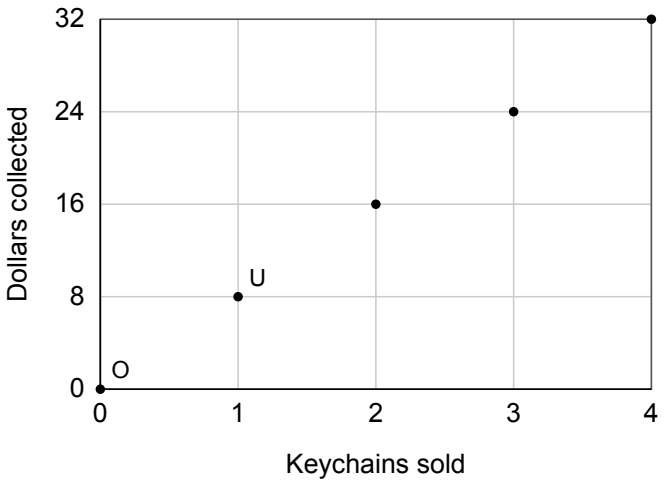
A scanner processes y pages in x minutes at a constant rate. Its graph includes (1, 12). What is the rate, and what does the point mean?

5. Practice

Apples cost $2 each. With x apples and y dollars, y = 2x. Does (9, 18) belong on the graph? Explain what the point means.

6. Apply

At a robotics fundraiser, x is keychains sold and y is dollars collected. Each keychain costs $8. Explain (0, 0) and (1, 8). Only whole numbers of keychains are sold; the plotted points represent valid sales counts.

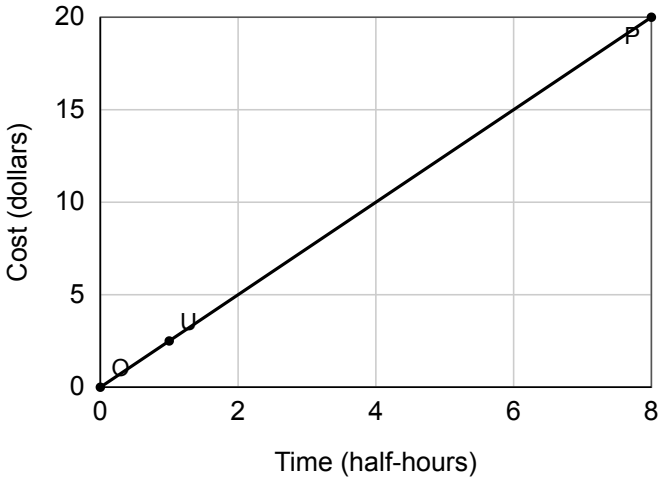


7. Apply

An art club sells stickers for $4 each. x is stickers and y is dollars. Explain (7, 28).

8. Challenge

A bike rental graph uses x half-hours and y dollars. It includes (0, 0), (1, 5/2), and (8, 20). Explain why (4, 10) belongs on the graph and what it means.



What to accept

Accept equivalent wording that correctly names both quantities and units. Accept $2.50 in place of $5/2.

1. Practice

O: 0 meters costs $0. U: 1 meter costs $4, so the unit rate is $4 per meter.

2. Practice

In 8 minutes, the tank receives 6 liters.

3. Practice

(5, 35) means 5 tickets cost $35.

4. Practice

12 pages per minute; the scanner processes 12 pages in 1 minute.

5. Practice

Yes. Since 2 x 9 = 18, the point means 9 apples cost $18.

6. Apply

(0, 0) means selling no keychains collects $0. (1, 8) means one keychain collects $8.

Use y = 8x. The origin represents zero sales, and the point with x = 1 gives the price of one keychain.

7. Apply

(7, 28) means 7 stickers cost $28.

Use y = 4x. The x-coordinate is the number of stickers, and the y-coordinate is the total cost.

8. Challenge

The unit rate is $5/2 per half-hour. Since 4 x 5/2 = 10, (4, 10) belongs. It means 4 half-hours of rental cost $10.