

Keisha and Dave are riding in a bike-a-thon. The tables below show distances they traveled.

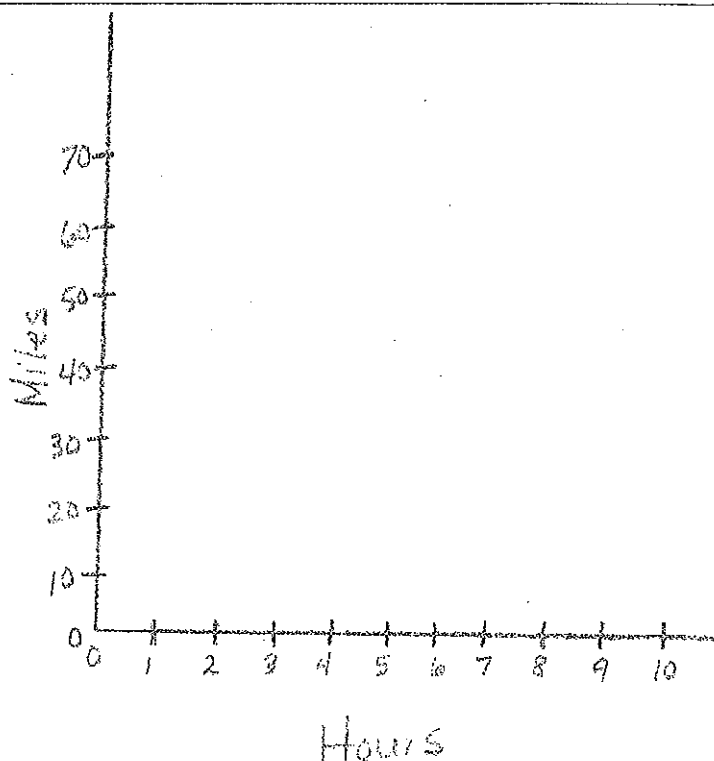
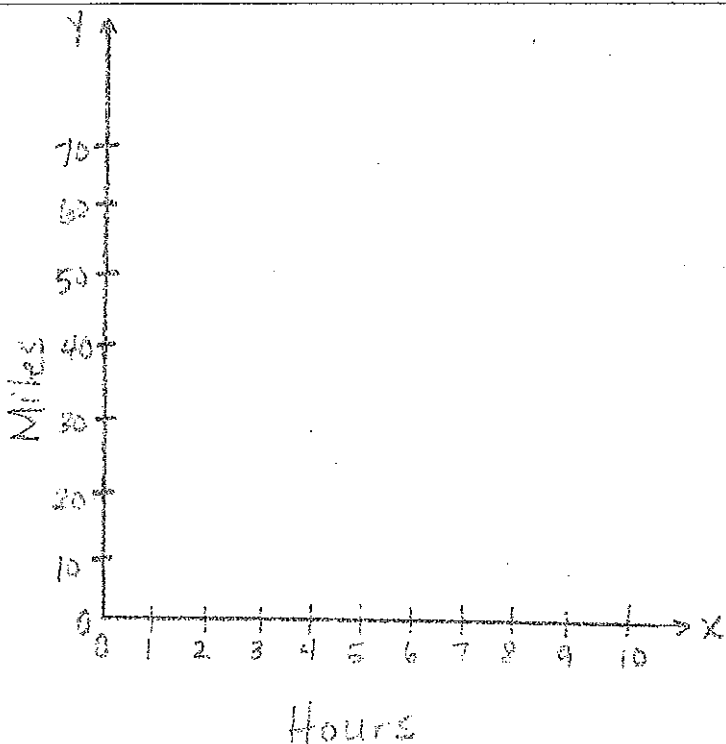
| Keisha |   |    |    |      |      |
|--------|---|----|----|------|------|
| Hours  | 0 | 2  | 4  | 5    | 7    |
| Miles  | 0 | 13 | 26 | 32.5 | 45.5 |

| Dave  |   |      |      |      |      |
|-------|---|------|------|------|------|
| Hours | 0 | 3    | 6    | 8    | 9    |
| Miles | 0 | 18.6 | 37.2 | 49.6 | 55.8 |

1. For each cyclist, graph the relationship between distance and time.

Keisha

Dave



2. Is there a proportional relationship between time and distance for either or both cyclists? Explain.

3. What does the point (4, 26) represent?

- What is the meaning of the point  $(0, 0)$  in this situation?
- Where  $x = 1$  on each graph, what does the  $y$  value represent?
- In the graph of any proportional relationship, what is represented by  $r$  at the point  $(1, r)$ ?
- How does  $r$  compare with the unit rate for each cyclist?

## Exercises

For Exercises 1–6, determine whether there is a proportional relationship. Explain your reasoning.

1. 

|     |   |   |    |    |    |
|-----|---|---|----|----|----|
| $x$ | 1 | 2 | 4  | 7  | 9  |
| $y$ | 5 | 9 | 17 | 29 | 37 |

2. 

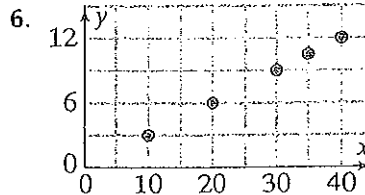
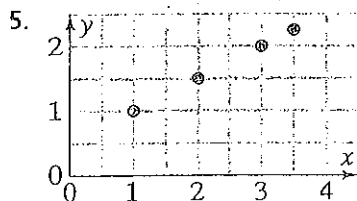
|     |     |   |     |   |     |
|-----|-----|---|-----|---|-----|
| $x$ | 2   | 4 | 6   | 8 | 10  |
| $y$ | 1.5 | 3 | 4.5 | 6 | 7.5 |

3. 

|     |               |                |                |                |                |
|-----|---------------|----------------|----------------|----------------|----------------|
| $x$ | 1             | 3              | 5              | 7              | 9              |
| $y$ | $\frac{7}{2}$ | $\frac{21}{2}$ | $\frac{35}{2}$ | $\frac{49}{2}$ | $\frac{63}{2}$ |

4. 

|     |   |   |    |    |    |
|-----|---|---|----|----|----|
| $x$ | 1 | 2 | 3  | 4  | 5  |
| $y$ | 2 | 8 | 16 | 32 | 64 |



For Exercises 7–8, explain what the point with  $x$ -coordinate 3 represents. Then find the unit rate,  $r$ .

