Practice worksheet | Probability

Conditional versus unconditional probabilities

Name: _____ Date: _____

6 questions | 14 marks

1. Find P(cycle) from the travel table. [2 marks]

Invented survey of 60 students; every student is in exactly one travel category.

Travel	Girl	Boy	Total
Cycle	12	8	20
Walk	18	22	40
Total	30	30	60

2. Find P(boy and cycle). [2 marks]

Invented survey of 60 students; every student is in exactly one travel category.

Travel	Girl	Boy	Total
Cycle	12	8	20
Walk	18	22	40
Total	30	30	60

3. Find P(boy|cycle). [2 marks]

Invented survey of 60 students; every student is in exactly one travel category.

Travel	Girl	Boy	Total
Cycle	12	8	20
Walk	18	22	40
Total	30	30	60

4. Are being a boy and cycling independent in this table? [3 marks]

Invented survey of 60 students; every student is in exactly one travel category.

Travel	Girl	Boy	Total
Cycle	12	8	20
Walk	18	22	40
Total	30	30	60

5. P(A)=0.25 and P(A|B)=0.25, with P(B)>0. What can you conclude? [2 marks]

6. A survey links extra tutoring with higher scores. Explain why a conditional proportion alone does not prove tutoring caused the increase. [3 marks]