**6-5**  Two-Way Tables: Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Determine if the events are independent.

1. Events: Joe drives to work, and started keeping track of the weather on days when he is late. Is being On-Time for Joe **dependent** on the rain?

|  |  |  |  |
| --- | --- | --- | --- |
|  | On-Time (OT) | Late (L) | Total Days |
| Rain (R) | 3 | 7 |  |
| No Rain (NR) | 31 | 9 |  |
| Total |  |  |  |

 P(R) = P(L) =

 P(R) $×$ P(L) = P(R$∩$L) = Ind. or Dep.

1. Events: Being in the 4th grade and Owning a dog

|  |  |  |  |
| --- | --- | --- | --- |
|  | Dog (D) | Cat (C) | Total Days |
| 4th grade | 35 | 15 |  |
| 5th grade | 14 | 6 |  |
| Total |  |  |  |

 P(4th) = P(D) =

 P(4th) $×$ P(D) = P(4th $∩$ D) = Ind. or Dep.

3. Events: Being in the 12th grade and drive to school.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Drive to school (Yes) | Do not drive to school (No) | Total Days |
| 12th grade | 73 | 27 |  |
| 11th grade | 42 | 58 |  |
| Total |  |  |  |

 P(12th ) = P(Yes) =

 P(12th ) $×$ P(Yes) = P(12th $∩$ Yes) = Ind. or Dep.

Complete the table and find the following probabilities:

4. Events: Domestic flights and on-time.

|  |  |  |  |
| --- | --- | --- | --- |
|  | On-Time (OT) | Late (L) | Total Days |
| Domestic (D) | 110 | 10 |  |
| International (Int) | 264 | 24 |  |
| Total |  |  |  |

 P(D) = P(OT) =

P(OT $∪$ Int.) =

 P(Int. $∪$ L) =

P(D $∪$ OT) = Shade the table above: D$ ∩$ L

Shade the Venn diagrams.

A

B

A

B

$A∩B$ $A∪B$