Name: _____

# Independent and Dependent Variables
## Writing Equations and Creating Tables

**Directions:** Identify the dependent and independent variables for each scenario. Write an equation to represent the relationship between variables. Finally, complete a table showing the constant relationship.

**1.** Charlotte reads for 30 minutes each day. Let $t$ represent the total number of minutes she reads, and $d$ represent the number of days. Determine the dependent and independent variables, write an equation to represent this relationship, and then complete the table to show Charlotte's reading for 1 week.

**Dependent variable:** _____

**Independent variable:** _____

**Equation:** _____

| Number of Days | Total Mins. Read |
|---|---|
| $d$ | $30d$ or $t$ |
| 1 | 30 |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |

**2.** Juan is shopping for school supplies. He bought a pencil case for $5.00, but now he needs pencils to go inside it. Each box of pencils is $3.00. Let $t$ represent the total cost, and $b$ represent each box of pencils. Determine the dependent and independent variables, write an equation to represent this relationship, and then complete the table to show the total cost with 1 to 5 boxes of pencils.

**Dependent variable:** _____

**Independent variable:** _____

**Equation:** _____

| Number of Boxes of Pencils | Total Cost |
|---|---|
| $b$ | $3b+5$ or $t$ |
| | |
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# Independent and Dependent Variables
### Writing Equations and Creating Tables

**3.** Monica goes for a 60 minute bike ride each day in the summer. Let *d* represent the number of days Monica rides her bike, and *m* represent the total number of minutes she spends riding her bike. Determine the dependent and independent variables, write an equation to represent this relationship, and then complete the table to show how many minutes Monica would ride her bike over the course of 1 week.

**Dependent variable:** _____

**Independent variable:** _____

**Equation:** _____

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|---|---|
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**4.** A rideshare service charges a flat fee of $6.00, plus $1.50 for every mile driven. Let *t* represent the total cost of the ride, and *m* represent the number of miles driven. Determine the dependent and independent variables, write an equation to represent this relationship, and then complete the table to show the total cost for riding 3 to 10 miles.

**Dependent variable:** _____

**Independent variable:** _____

**Equation:** _____

| | |
|---|---|
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# ANSWER KEY

## Independent and Dependent Variables
### Writing Equations and Creating Tables

**1. Dependent variable:** _total minutes read ($t$)_

**Independent variable:** _number of days ($d$)_

**Equation:** _$t = 30d$_

| Number of Days | Total Mins. Read |
|----------------|------------------|
| $d$ | $30d$  or  $t$ |
| 1 | 30 |
| 2 | 60 |
| 3 | 90 |
| 4 | 120 |
| 5 | 150 |
| 6 | 180 |
| 7 | 210 |

**2. Dependent variable:** _total cost ($t$)_

**Independent variable:** _number of boxes of pencils ($b$)_

**Equation:** _$t = 3b + 5$_

| Number of Boxes of Pencils | Total Cost |
|----------------------------|------------|
| $b$ | $3b + 5$  or  $t$ |
| 1 | 8 |
| 2 | 11 |
| 3 | 14 |
| 4 | 17 |
| 5 | 20 |

**3. Dependent variable:** _total mins. riding bike ($m$)_

**Independent variable:** _number of days ($d$)_

**Equation:** _$m = 60d$_

| Number of Days | Total Mins. |
|----------------|-------------|
| $d$ | $60d$  or  $m$ |
| 1 | 60 |
| 2 | 120 |
| 3 | 180 |
| 4 | 240 |
| 5 | 300 |
| 6 | 360 |
| 7 | 420 |

**4. Dependent variable:** _total cost ($t$)_

**Independent variable:** _number of miles ($m$)_

**Equation:** _$t = 1.50m + 6$_

| Number of Miles | Total Cost |
|-----------------|------------|
| $m$ | $1.50m + 6$  or  $t$ |
| 3 | 10.50 |
| 4 | 12.00 |
| 5 | 13.50 |
| 6 | 15.00 |
| 7 | 16.50 |
| 8 | 18.00 |
| 9 | 19.50 |
| 10 | 21.00 |

KH