Lesson 2.12.2 Skills Practice

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use each scenario to complete the table of values and calculate the unit rate of change.

1. Miguel is riding his bike to lacrosse practice at a rate of 7 miles per hour.

Independent Quantity Dependent Quantity

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|  Time | Distance |
| hours | miles |
| t | 7t |
| 0 | 0 |
| 0.5 | 3.5 |
| 1 | 7 |
| 1.5 | 10.5 |
| 2 | 14 |
|  |  |



2. Jada is walking to school at a rate of 2 miles per hour.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|   |  |
|  |  |
|  |  |
| 5 |  |
| 10 |  |
| 15 |  |
| 20 |  |
| 25 |  |



3. Noah is stuffing envelopes with invitations to the school’s Harvest Festival. He stuffs 4 envelopes

each minute.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|   |  |
|  |  |
|  |  |
|  |  |
| 5 |  |
| 10 |  |
| 15 |  |
| 20 |  |
|  25 |  |



4. Terell plays on the varsity basketball team. He averages 12 points per game.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|  |  |
|  |  |
|  |  |
| 1 |  |
| 3 |  |
| 5 |  |
| 7 |  |
| 9 |  |



5. The volleyball boosters sell bags of popcorn during the varsity matches to raise money for new

uniforms. Each bag of popcorn costs $3.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|  |  |
|  |  |
|  |  |
| 5 |  |
| 10 |  |
| 15 |  |
| 20 |  |
| 25 |  |



6. The football boosters sell hooded sweatshirts to raise money for new equipment. Each sweatshirt

costs $18.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|  |  |
|  |  |
|  |  |
| 5 |  |
| 10 |  |
| 20 |  |
| 30 |  |
| 40 |  |



Lesson 2.22.2 Skills Practice

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Complete the table to represent each problem situation.

1. A hot air balloon cruising at 1000 feet begins to ascend. It ascends at a rate of 200 feet per minute.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|  Time | Height |
| minutes | feet |
| 0 | 1000 |
| 4 | 1400 |
| 6 | 1800 |
| 8 | 2200 |
| 2 | 2600 |
|  t |  |



2. A bathtub contains 10 gallons of water. The faucet is turned on and fills the tub at a rate

of 5.25 gallons per minute.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|   |  |
|  |  |
| 0 |  |
| 1 |  |
| 3 |  |
|  | 36.25 |
|  | 46.75 |
|  |  |



3. A helicopter flying at 4125 feet begins its descent. It descends at a rate of 550 feet per minute.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|   |  |
|  |  |
| 0 |  |
| 1 |  |
| 2 |  |
|  | 2475 |
|  | 1925 |
|  |  |


4. A fish tank filled with 12 gallons of water is drained. The water drains at a rate

of 1.5 gallons per minute.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|   |  |
|  |  |
| 0 |  |
| 1 |  |
| 3 |  |
|  | 4.5 |
|  | 1.5 |
|  |  |



5. A submarine is traveling at a depth of 2300 feet. It begins ascending at a rate of 28 feet per minute.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|   |  |
|  |  |
| 0 |  |
| 2 |  |
| 4 |  |
|  | -132 |
|  | -76 |
|  |  |



6. A free-diver is diving from the surface of the water at a rate of 15 feet per minute.

|  |  |
| --- | --- |
| Independent Quantity | Dependent Quantity |
|   |  |
|  |  |
| 0 |  |
| 1 |  |
| 2 |  |
|  | -45 |
|  | -60 |
|  |  |



Lesson 2.2 Skills Practice

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Problem Set

Write a linear function in two different ways to represent each problem situation.

1. Mei paints and sells ceramic vases for $35 each. Each month she typically breaks 3 vases in the kiln.

Write a linear function that represents the total amount Mei earns each month selling vases taking

into account the value of the vases she breaks.



2. Isabel makes and sells fruit pies at her bakery for $12.99 each. Each month she gives away 4 pies as

samples. Write a linear function that represents the total amount Isabel earns each month selling fruit

pies taking into account the value of the pies she gives away as samples.

3. Mattie sells heads of lettuce for $1.99 each from a roadside farmer’s market stand. Each week she

loses 2 heads of lettuce due to spoilage. Write a linear function that represents the total amount

Mattie earns each week selling heads of lettuce taking into account the value of the lettuce she loses

due to spoilage.

4. Carlos prints and sells T-shirts for $14.99 each. Each month 5 T-shirts are misprinted and cannot be

sold. Write a linear equation that represents the total amount Carlos earns each month selling T-shirts

taking into account the value of the T-shirts that cannot be sold.

5. Odell prints and sells posters for $20 each. Each month 1 poster is misprinted and cannot be sold.

 Write a linear equation that represents the total amount Odell earns each month taking into account

 the value of the poster that cannot be sold.

6. Emilio builds and sells homemade wooden toys for $40 each. Each month he donates 3 toys to a

children’s hospital. Write a linear equation that represents the total amount Emilio earns each month

selling toys taking into account the toys he donates.

Write a linear function to represent each problem situation.

7. A cereal manufacturer has two production lines. Line A produces a variety of cereal that is sold for $3

per box. Line A typically produces 4 boxes per day that do not meet company standards and cannot

be sold. Line B produces a variety of cereal that is sold for $2 per box. Line B typically produces 6

boxes per day that do not meet company standards and cannot be sold. Line A and Line B produce

the same total number of boxes each day.

The linear functions represent the total amount each line can

produce taking into account the boxes that do not meet company standards and cannot be sold.

Write a linear function that represents the total number of boxes the lines can produce combined.



The linear function  represents the total number of boxes that Line A

and Line B can produce combined.

8. A pretzel manufacturer has two production lines. Line A produces a variety of pretzel that is sold for

$2.40 per bag. Line A typically produces 3 bags per day that do not meet company standards and

cannot be sold. Line B produces a variety of pretzel that is sold for $3.60 per bag. Line B typically

produces 4 bags per day that do not meet company standards and cannot be sold. Line A produces

3 times as many bags as Line B each day.

The linear functions represent the total number of bags each

line can produce taking into account the bags that do not meet company standards and cannot be.

Write a linear function that represents the total number of bags the lines can produce combined.

9. Carlos has a roadside stand that sells peaches. He sells his peaches for $1.99 per pound. He

typically loses 5 pounds per week to spoilage. Hector also has a roadside stand that sells peaches.

He sells his peaches for $2.49 per pound. He typically only loses 1 pound per week to spoilage.

Carlos’ stand sells twice as many peaches per week as Hector’s stand.

The linear functions represent the total amount each stand

can earn taking into account the peaches lost to spoilage. Write a linear function that represents the

total amount that Carlos and Hector can earn combined.

10. A lamp manufacturer has two production lines. Line A produces a lamp model that is sold for $24.99

each. Line A typically produces 2 lamps per day that do not meet company standards and cannot be

sold. Line B produces a lamp model that is sold for $34.99 each. Line B typically produces 1 lamp

per day that does not meet company standards and cannot be sold. Line A produces half as many

lamps as Line B each day.

The linear functions represent the total number of lamps each line can produce taking into account the lamps that do not meet company standards and

cannot be sold. Write a linear function that represents the total number of lamps the lines can

produce combined.

11. A jean manufacturer has two production lines. Line A produces a style that is sold for $42 each. Line

A typically produces 2 pairs per day that do not meet company standards and cannot be sold. Line B

produces a style that can be sold for $65 each. Line B typically produces 3 pairs per day that do not

meet company standards and cannot be sold. Line A produces three times as many pairs of jeans as

Line B each day.

The linear functions represent the total number of pairs of jeans that each line can produce taking into account the jeans that do not meet company standards and

cannot be sold. Write a linear function that represents the total number of pairs of jeans the lines can

produce combined.

12. Jada makes and sells handmade puzzles for $32 each. Each month she donates 2 puzzles to a

retirement community. Ronna also makes and sells handmade puzzles for $28 each. Each month

she donates 2 puzzles to a childcare center. Jada and Ronna make the same number of puzzles

each month.

The linear functions represent the total amount each girl can earn taking into account the puzzles that are donated and not sold. Write a linear function that represents

the total amount Jada and Ronna can earn combined.