1. You have hired a worker to build a deck for you; they charge $25 per hour. The materials for the deck cost $320. The worker says the job will take at most 5 hours to complete.

c) Fill out the table:

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

a) Identify the independent and dependent variables.

b) What is a reasonable domain for this situation?

d) Write a function showing the cost of the job *C(h)* when the worker spends *h* hours building the deck.

e) Would this function be continuous or discrete? Explain.

f) Explain the meaning of C(2.5) = 382.5

1. You and a group of friends are buying tickets to the orchestra. The tickets are $17.50 each and you have one $10 off coupon.

e) If C(t) = 42.5, find t.

d) Explain the meaning of C(7) = 112.5

c) Would this function be continuous or discrete? Explain.

a) Identify the independent and dependent variables.

b) Write a function showing the total cost of the tickets *C(t)* when *t* tickets are purchased.

3) You have a 20-gallon tank of water that is draining at 2.5 gallons per minute.

b) Plot the points:



a) Fill out the table:

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

d) Is the function linear? Explain using two different methods.

c) Would this function be continuous or discrete? Explain.

e) If W(t) = 14, find t.

4) You have $50 to spend and DVDs cost $9.00 each.

b) Is the function linear? Explain.

a) Fill out the table:

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

d) What is a reasonable domain for this situation?

c) Would this function be continuous or discrete? Explain.

e) Write a function showing the amount of money *M* you have left after buying *d* DVDs.

5) You went for a run and kept track of how far you were from your house at certain intervals.

a)

|  |  |
| --- | --- |
| Time(minutes) | Distance from your house (km) |
| 0 | 0 |
| 5 | 1.5 |
| 10 | 3.5 |
| 15 | 5 |
| 20 | 3 |
| 25 | 1.5 |
| 30 | 0 |

b) Plot the points



c) Would this function be continuous or discrete? Explain.

d) Is the function linear? Explain.

e) Explain the meaning of d(22) = 2.4.

6) A car is 250 miles from its destination and driving at 75 miles per hour.

b) Plot the points

a) Fill out the table:

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |



e) Write a function showing the distance *d* the car is from its destination after *h* hours.

d) If d(t) = 150, find h.

c) Would this function be continuous or discrete? Explain.

7) You buy a 2 ft. tall tree. The salesman said it would grow 3 feet per year for the first six years.

b) Plot the points:

a) Fill out the table:

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

c) Would this function be continuous or discrete? Explain.

e) Write a function showing the height *h* of the tree after *t* years.

d) Is the function linear? Explain using two different methods.

8) The battery on your phone is at 75% and is draining at 18% per hour.

b) Would this function be continuous or discrete? Explain.

a) Fill out the table:

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

c) Write a function showing the percentage of battery left *B* after *t* hours.

d) If B(t) = 25, find t.

e) Is the function linear? Explain.

9) You and a group of friends are buying tickets to the museum. The tickets are $15.95 each and you have one $10 off coupon.

a) Write a function showing the total cost of the tickets *C(t)* when *t* tickets are purchased.

d) If C(t) = 165.45, find t.

c) Explain the meaning of C(5) = 69.75

b) Would this function be continuous or discrete? Explain.

10) You are keeping track of the number of students in a class during a flu outbreak.

b) Would this function be continuous or discrete? Explain.

b) Plot the points

a)

|  |  |
| --- | --- |
| Days | Number of students in class |
| 0 | 20 |
| 1 | 19 |
| 2 | 9 |
| 3 | 11 |
| 4 | 13 |
| 5 | 17 |
| 6 | 19 |

c) Is the function linear? Explain using two different methods.

d) Explain the meaning of S(3) = 11.

11) You have $55 to spend and books cost $8.50 each.

b) Would this function be continuous or discrete? Explain.

a) Fill out the table:

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

c) Write a function showing the amount of money *M* you have left after buying *b* books.

d) What is a reasonable domain for this situation?

e) Explain the meaning of M(4) = 21.

12) Each cereal bar that you eat contains 150 calories.

d) Explain the meaning of C(3.5) = 525.

c) Would this function be continuous or discrete? Explain.

b) Plot the points

a) Fill out the table:

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

e) If C(b) = 700 find b.