**Show ALL work in order to receive full credit…**

**The rate of change is constant in each table. Find the rate of change. Explain what the rate of change means for the situation.**

1)

|  |  |
| --- | --- |
| Time (days) | Cost ($) |
| 3 | 75 |
| 4 | 100 |
| 5 | 125 |
| 6 | 150 |

|  |  |
| --- | --- |
| A. | dollars per day; the cost is $25 for each day. |
| B. | dollars per day; the cost is $25 for each day. |
| C. | dollars per day; the cost is $75 for each day. |
| D. | dollars per day; the costs $1 for 150 days |

2)

|  |  |
| --- | --- |
| Time (hours) | Distance (miles) |
| 4 | 260 |
| 6 | 390 |
| 8 | 520 |
| 10 | 650 |

|  |  |
| --- | --- |
| A. | 10; Your car travels for 10 hours. |
| B. | 260; Your car travels 260 miles. |
| C. | ; Your car travels 65 miles every 1 hour. |
| D. | ; Your car travels 65 miles every 1 hour. |

**Find the slope of the line and show/explain your method.**

3) 

Slope =\_\_\_\_\_\_\_\_\_\_\_\_

4) 

Slope =\_\_\_\_\_\_\_\_\_\_\_\_

5)  Slope =\_\_\_\_\_\_\_\_\_\_\_\_

6)  Slope =\_\_\_\_\_\_\_\_\_\_\_\_

**Find the slope of the line passing through each pair of points.**

|  |  |  |  |
| --- | --- | --- | --- |
| **7.** (1, 0), (2, 4) | **8.** (6, 2), (2, –2) | **9.** (–1, 1), (4, 4) | **10**. (6**,** –8), (6, –10) |
| **11.** (–7, 4), (2, 1) | **12.** (5**,** –3), (–2, –3) | **13.** (–3, 2), (2, 7) | **14.** (–3, 5), (0,0) |

**Solve the problems and find the rate of change:**

15) Every hour, John is able to bike the same number of kilometers. If on his 2nd hour of biking he has gone 40 kilometers, and on his 5th hour of biking he has gone 100 kilometers, what is the rate at which he bikes?

16) Every hour at work, you are able to pick the same number of apples. If in the 4th hour of work, you have picked 220 apples, and by the 6th hour, you have picked 440 apples, what is the rate at which you pick the apples?

17) A student can do an average of 25 math problems an hour. If at a certain time of day, he has done 40 math problems, how many problems will he have done if he continues working for another 2 hours?

18) Kevin's savings account balance changed from $1140 in January to $1450 in April. Find the average rate of change per month. Round your answer to the nearest dollar.

19) Jack is driving from his house to the airport. At 9:00AM, he is 150 miles from the airport. At 10:30AM, he is 75 miles from the airport. What is Jack’s average driving speed between 9:00AM and 10:30AM?

20) Create a problem with rate of change. Solve it and explain your solution.