|  |  |
| --- | --- |
| NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_ | **Algebra Review** |
| More finding lines and interpreting slope | **DATE: Tuesday, March 21, 2017** |

Word Problems:

1. Ahmed has improved dramatically in math once he set his mind to it. After 2 weeks of focusing, his grade was a 56, after 7 weeks, his grades was a 71. Assume his grade goes up the same amount each week. (the two points are (2,56) and (7,71)

1. Find the slope?
2. Find the equation that represents this.
3. Can you guess what the slope means in real terms?
4. Can you guess what the y-intercept means in real terms.
5. If this continues, whats his grade after 10 weeks?
6. When will his grade be 100?

2. Gracia has a phone plan where they charge her a set amount for unlimited texting and minutes, and then a certain amount for each gigabyte over of data she uses. If she uses 3 extra gigs minutes extra in the month, her bill is $79. If she uses 7 extra gigs her total bill is $103. (So the two points are (3,79) and (7,103)

1. Find the equation that represents this.
2. Can you guess what the slope means in real terms?
3. Can you guess what the y-intercept means in real terms.
4. If she uses 10 gigs, what’s the cost?

Abdi goes to a recording studio to record some music. The first time he was there 2 hours and they charged him $380. The next time was there 7 hours and it cost $700.

1. Find the equation that represents this.
2. Can you guess what the slope means in real terms?
3. Can you guess what the y-intercept means in real terms.
4. If it takes 5 hours, how much is the cost?

After high school, Abdisalam gets a job working for his uncle selling cars and he will make money for coming to work, but if they sell cars, they will get extra money. If he sells a total of 10 cars, they will make $2300. If he sells 4 cars, they will make $1400 in total.

1. Find the equation that represents this.
2. Can you guess what the slope means in real terms?
3. Can you guess what the y-intercept means in real terms.
4. If Abdisalam, works hard and sell 20 cars, how much will they make in total?

# Notes on finding the equation of line given two points

*Find the equation of a line goes through (4,5) and (8,-23)*

Remember all lines can be expressed as y= \_\_\_x + \_\_\_\_

y=mx+b

where

m=slope

b = y-intercept

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Steps:***   1. *Find the* ***slope****.* 2. *Re-write* ***y=mx+b*** *with the slope (which is m).* 3. *Find the* ***y intercept****.*    1. *Now use one point and substitute it into the equation for y and x and solve for b* 4. *Re-write* ***y=mx+b*** *with the y-intercept (which is b).* 5. ***Check*** *and your done* | ***Our points are*** *(4,5) and (8,-23)*  *1.*  *2. y=-7x+b*  *3. Lets substitute (4,5) in and solve for b*   |  |  | | --- | --- | | *y=-7x+b* | *Start with our equation* | | *(5) = -7(4) +b* | *4 is x, and 5 is y* | | *5 = -28+b* | *Simplify* | | *+28 +28* | *Add 28 on each side to get b alone* | | *33 = b* | *b, the y-intercept is 33* |   *4. y=-7x+33*  *5. Lets test the other point: (8,-23)*  *y=-7x+33*  *-23=-7(8)+33*  *-23=-56+33*  *-23 =-23 YES IT WORKS* |