Alg 1 Tuesday Week 9 Warm Up

Skill 3: Solve and Graph Compound Inequalities on a Number Line

$$-4 > y + 2 > -10$$



Skill 4: Solve and Graph Absolute Value Inequalities and Equations

$$4|v-5|-8=16$$



Write a rule that represents the function: (0,0) (1,1) (2,4) (3,9) (4,16)

Academic Recovery next week!

Week 9 , Tuesday CW

# In the Heat of the Night

Randy and a group of his friends went camping for a weekend in the Desolation Wilderness. At night the crickets were making so much noise that no one could sleep. Randy remembered from science class that a good way to approximate the temperature was to count how many times a cricket chirps in one minute, multiply this count by $\frac{1}{4}$, and add 40°. The group decided to use Randy's idea to estimate the temperature. They counted 100 chirps in one minute. Randy then computed the approximate temperature: $\frac{1}{4}(100) + 40 = 65^\circ$.

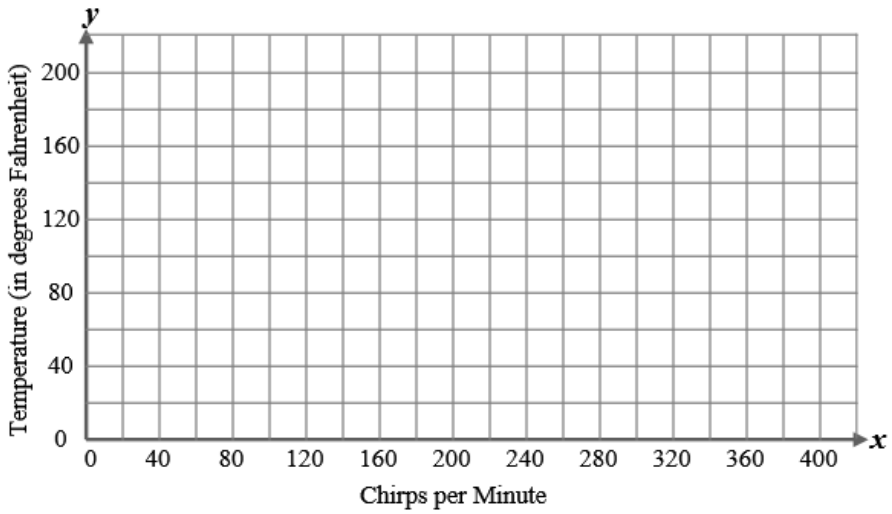
1. Write the formula used to find the approximate temperature.
   Let $t$ = approximate temperature in degrees Fahrenheit
   $n$ = number of cricket chirps in one minute

   *Formula*: _____

2. Choose appropriate values for $n$. (Hint: Look at the $x$-axis on the graph below.) Then complete the table by calculating each value of $t$.

| # Chirps per Minute ($n$) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Temp. in degrees ($t$) | | | | | | | | | | |

3. Now graph these points on the grid provided below.




4. What is the starting point on your graph? _____ What is the rate of change (slope)? _____

5. Use your graph to find the temperature if you count 300 chirps per minute.

6. Use your graph to estimate the number of chirps per minute you should count if the temperature is 62°.

7. Check the accuracy of your answer by substituting your answer from #6 into the formula. (Show your work.) Did you get 62°?

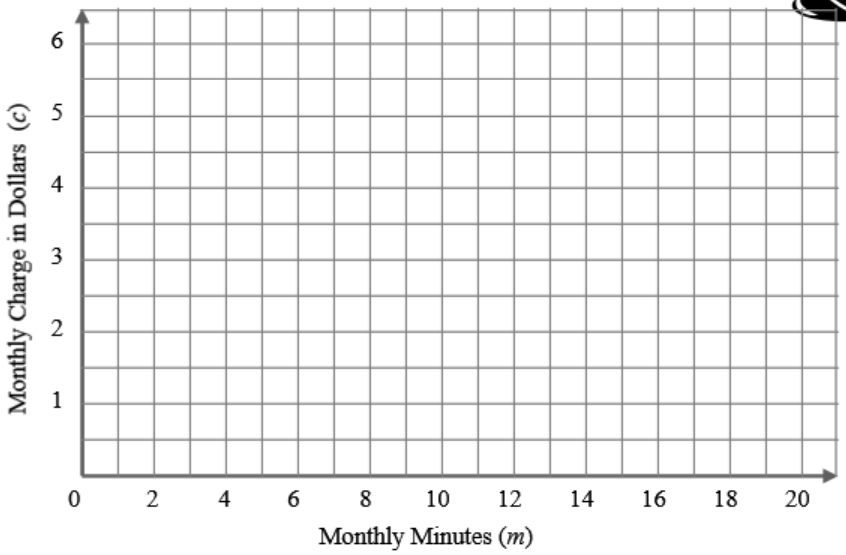
Week 9 Tuesday HW All Lined Up

Sandi recently signed up for long distance telephone service from Phones-R-Us. Phones-R-Us charges $4.00 per month flat rate, plus $.10 per minute of long distance calling. The algebraic equation (or **formula**) for this situation could be expressed as:
$c = 0.10m + 4.00$.

1. Complete the following table to determine the charges that Sandi would pay for various minutes of long distance calling by substituting the values in the table for $m$ into the formula and calculating the value for $c$.

| Monthly Minutes ($m$) | 0 | 2 | 8 | 14 | 20 |
|---|---|---|---|---|---|
| Monthly Charge ($c$) | | | | | |

2. Graph these points below:




3. Connect the points you graphed above. You have just graphed a **linear formula**. It is called *linear* because the graph forms a straight line. In the formula, $m$ represents the number of monthly minutes of calls and $c$ represents the monthly charge in dollars.

4. What is the slope of this graph (rate of change)?

5. What is the **starting point**? (If you make zero calls, what is the cost?)

6. What does the fourth point on your graph represent?

7. Use the formula to find the cost for 25 minutes of monthly calls.