Name: _____ Period: _____ Date: Key

Writing Linear Equations Given 2 Points
Homework

1. Biologists found that the number of chirps some crickets make per minute is related to the temperature. When crickets chirp 124 times a minute, it's 68°. When they chirp 172 times it's 80°. Write the equation of the line.

point (68 degrees, 124 chirps) slope = 4 y-int = (0, −148)

point (80 degrees, 172 chirps) equation $y = 4x - 148$

X	y
68	124
80	172

+12 > +48

$\frac{\Delta y}{\Delta x} = \frac{48}{12} = 4$

$y - 124 = 4(x - 68)$

$y - 124 = 4x - 272$

$+124 \quad +124$

$y = 4x - 148$

2. A 5-minute overseas call costs $5.91 and a 10-minute call costs $10.86. (5, 5.91) (10, 10.86)

Write an equation of the line. $y - 5.91 = .99(x - 5)$

min	$
5	5.91
10	10.86

+5 > +4.95

STAT EDIT
STAT CALC
4:LinReg

a. How much does each extra minute cost? Rate?

$\frac{4.95}{5} = 0.99$ | $0.99 per minute

b. How much would a 30-minute call cost?

$y = .99x + .96$

$y = .99(30) + .96$

$y = 30.66$ | $30.66

Find the slope and write the equation for the line through the given two points in point-slope form. Convert to slope-intercept form.

3. (−3, 3) and (1, 7)

$m = \frac{4}{4} = 1$

X	y
−3	3
1	7

+4 > +4

$y - 7 = 1(x - 1)$

$y - 7 = x - 1$

$+7 \quad +7$

$y = x + 6$

4. (0, 4) and (−4, 5)

$m = -\frac{1}{4}$

X	y
0	4
−4	5

−4 > +1

$y - 4 = -\frac{1}{4}(x - 0)$

$y - 4 = -\frac{1}{4}x + 0$

$+4 \quad +4$

$y = -\frac{1}{4}x + 4$

5. (2, 5) and (5, 11)

$m = \frac{6}{3} = 2$

X	y
2	5
5	11

+3 > +6

$y - 5 = 2(x - 2)$

$y - 5 = 2x - 4$

$+5 \quad +5$

$y = 2x + 1$

6. (1.5, −4) and (3.5, 8)

$m = \frac{\Delta y}{\Delta x} = \frac{12}{2} = 6$

X	y
1.5	−4
3.5	8

+2 > +12

$y - 8 = 6(x - 3.5)$

$y - 8 = 6x - 21$

$+8 \quad +8$

$y = 6x - 13$