MAT1033 Class Worksheet 3

Find an equation of the line that satisfies the conditions. Write the equation in standard form.

1) Through (2, 5); $m = -\frac{2}{5}$

$y - 5 = -\frac{2}{5}(x-2)$ → $5(y-5) = (-\frac{2}{5}x + \frac{4}{5})5$ → $5y - 25 = -2x + 4$ → $5y = -2x + 29$ → $2x + 5y = 29$

$y = -\frac{2}{5}x + \frac{29}{5}$

Find an equation of the line passing through the two points. Write the equation in standard form.

2) (-2, -6) and (-7, 0)

$m = \frac{0-(-6)}{-7-(-2)} = \frac{6}{-5} = -\frac{6}{5}$

$y - 0 = -\frac{6}{5}(x + (+7))$ → $y = -\frac{6}{5}x - \frac{42}{5}$ → $\frac{6}{5}x + y = -\frac{42}{5}$ → $6x + 5y = -42$

$5(\frac{2}{5}x + y) = \frac{29}{5}5$

Write the slope-intercept form of the equation for the line passing through the given pair of points.

3) (9, -10) and (9, -4)

$x = 9$

Find an equation of the line satisfying the conditions. Write the equation in slope-intercept form.

4) Through (-3, 8); perpendicular to $-3x + 4y = -23$

$4y = 3x - 23$ → $m = \frac{3}{4}$

$y - 8 = -\frac{4}{3}(x+3)$ → $y = -\frac{4}{3}x + 4$

$y - 8 = -\frac{4}{3}x - 4$

Solve the problem.

5) Using a phone card to make a long distance call costs a flat fee of \$0.54 plus \$0.14 per minute starting with the first minute. What is an equation of the form $y = mx + b$ for this situation?

$y = 0.14x + 0.54$

$y + 6 = -\frac{6}{5}(x+2)$

$5(y+6) = (-\frac{6}{5}x - \frac{12}{5})5$

$5y + 30 = -6x - 12$

$6x + 5y = -42$