Substituting Values in Algebraic Expressions

Evaluate each expression for the specified values of x.
Organize the information in a chart

1.) $3x + 2$ for $x = 0, \frac{1}{3}, 2, 4$

x	y
0	2
1/3	3
2	8
4	14

$3(0) + 2 = 0 + 2 = 2$
$3(\frac{1}{3}) + 2 = 1 + 2 = 3$
$3(2) + 2 = 6 + 2 = 8$
$3(4) + 2 = 12 + 2 = 14$

2.) $4x + 1$ for $x = \frac{1}{4}, 1, 2, 4$

x	y
1/4	2
1	5
2	9
4	17

$4(\frac{1}{4}) + 1 = 1 + 1 = 2$
$4(1) + 1 = 4 + 1 = 5$
$4(2) + 1 = 8 + 1 = 9$
$4(4) + 1 = 16 + 1 = 17$

3.) $\frac{3x - 2}{x}$ for $x = 1, 2, 3, 4$

x	y
1	1
2	2
3	7/3
4	5/2

$\frac{3(1) - 2}{1} = 3 - 2 = 1$ $\frac{3(2) - 2}{2} = \frac{6 - 2}{2} = \frac{4}{2} = 2$

$\frac{3(3) - 2}{3} = \frac{9 - 2}{3} = \frac{7}{3}$ $\frac{3(4) - 2}{4} = \frac{12 - 2}{4} = \frac{10}{4} = \frac{5}{2}$

4.) $\frac{x + 3}{x - 1}$ for $x = 2, 3, 4, 5$

x	y
2	5
3	3
4	7/3
5	2

$\frac{2 + 3}{2 - 1} = \frac{5}{1} = 5$ $\frac{3 + 3}{3 - 1} = \frac{6}{2} = 3$

$\frac{4 + 3}{4 - 1} = \frac{7}{3}$ $\frac{5 + 3}{5 - 1} = \frac{8}{4} = 2$

Evaluate the expression for the given values of the variables

1.) $2x + 3y$ for $x=0$, $y=2$

$2(0) + 3(2)$
$= 0 + 6$
$= 6$

2.) $\dfrac{y_2 - y_1}{x_2 - x_1}$ for $x_1 = 2$, $x_2 = 5$, $y_1 = 4$, $y_2 = 6$ → $P_1 = (2, 4)$, $P_2 = (5, 6)$

$\dfrac{6-4}{5-2} = \dfrac{2}{3} = m$ in $y = \underline{m}x + b$

3.)