Algebra 2

Topic 2 // Writing Equations // ***Practice D***

N: Key

D:

P: 1 2 3 4 5 6

1. $m=\dfrac{(y_2-y_1)}{(x_2-x_1)}$ → 2. $y-y_1=m(x-x_1)$ → 3. $y=mx+b$

Ex 1: **Write** the equation of a line and through (2, 3) and (3, 6)

$x_1\ y_1 \quad x_2\ y_2$

$m=\dfrac{6-3}{3-2}=\dfrac{3}{1}=3$

$y-6=3(x-3)$

$y-6=3x-9$

$+6 \quad +6$

$\rightarrow \boxed{y=3x-3}$

Ex 2: **Write** the equation of a line with a slope of –2 and through (-4,2)

$m=-2 \quad x_1\ y_1$

$y-2=-2(x--4)$

$y-2=-2(x+4)$

$y-2=-2x-8$

$+2 \quad +2$

$\rightarrow \boxed{y=-2x-6}$

Ex 3: **Write** the equation of a line with a slope of –1/5 and through (-10,2)

$m=-1/5 \quad x_1\ y_1$

$y-2=-1/5\,(x--10)$

$y-2=-1/5\,(x+10)$

$y-2=-1/5\,x-2$

$+2 \quad +2$

$\rightarrow \boxed{y=-1/5\,x}$

Ex 4: **Write** the equation of a line and through (2, 3) and (5, -6)

$x_1\ y_1 \quad x_2\ y_2$

$m=\dfrac{-6-3}{5-2}=\dfrac{-9}{3}=-3$

$y-3=-3(x-2)$

$y-3=-3x+6$

$+3 \quad +3$

$\rightarrow \boxed{y=-3x+9}$

Ex 5: **Write** the equation of a line with a slope of 3/4 and through (-16,4)

$m=3/4 \quad x_1\ y_1$

$y-4=3/4\,(x-16)$

$y-4=3/4\,x-12$

$+4 \quad +4$

$\rightarrow \boxed{y=3/4\,x-8}$

Ex 6: **Write** the equation of a line and through (1, 6) and (-5, -6)

$x_1\ y_1 \quad x_2\ y_2$

$m=\dfrac{-6-6}{-5-1}=\dfrac{-12}{-6}=2$

$y-6=2(x-1)$

$y-6=2x-2$

$+6 \quad +6$

$\rightarrow \boxed{y=2x+4}$

Ex 7: **Write** the equation of a line and through (1, -6) and (8, 8)

$x_1\ y_1 \quad x_2\ y_2$

$m=\dfrac{8--6}{8-1}=\dfrac{14}{7}=2$

$y-8=2(x-8)$

$y-8=2x-16$

$+8 \quad +8$

$\rightarrow \boxed{y=2x-8}$

Ex 8: **Write** the equation of a line with a slope of –3 and through (-5,4)

$m=-3 \quad x_1\ y_1$

$y-4=-3(x--5)$

$y-4=-3(x+5)$

$y-4=-3x-15$

$+4 \quad +4$

$\boxed{y=-3x-11}$