

HMW K

① $m = \frac{-7+1}{2-4} = \frac{-6}{-2} = 3$

$y = mx + b$
 $-7 = 3(2) + b$
 $-7 = 6 + b$
 $-13 = b$

$y = -x - 5$

② $y = mx + b$
 $-2 = 6(3) + b$
 $-2 = 18 + b$
 $-20 = b$

$y = 6x - 20$

③ $m = \frac{8-6}{2-2} = \frac{2}{0} = \frac{1}{2}$

$m = -2$
 $y = mx + b$
 $5 = -2(4) + b$
 $5 = 8 + b$
 $-3 = b$

$y = -2x - 3$

④ $m = \frac{1}{2}$

$y = mx + b$
 $5 = \frac{1}{2}(-4) + b$
 $5 = -2 + b$
 $7 = b$

$y = \frac{1}{2}x + 7$

⑤ $(0,4) (2,0)$
 $m = \frac{-4}{2} = -2$

$y = 2x + 4$

⑥ $5y = -kx + 10$
 $y = -\frac{k}{5}x + 2$

a) $10 = -\frac{k}{5}$
 $k = -50$

b) $6 = -\frac{k}{5} \cdot 3 + 2$
 $4 = -\frac{3k}{5}$
 $20 = -3k$

$k = -\frac{20}{3}$

c) $\frac{1}{2} = -\frac{k}{5}$
 $-2k = 5$

$k = -\frac{5}{2}$

d) $\frac{2}{5} = -\frac{k}{5}$

$k = -2$

e) $-\frac{5}{2} = -\frac{k}{5}$

$k = \frac{25}{2}$

① a) $-2(-\sqrt{2})^3 - 4$
 $-2(-2) - 4$
 0

b) $-2(\frac{1}{t})^3 - 4$
 $-\frac{2}{t^3} - 4$

* c) $-2(m-2)^3 - 4$
 $-2(m-2)(m^2 - 4m + 4) - 4$
 $-2(m^3 - 4m^2 + 4m - 2m^2 + 8m - 8) - 4$
 $-2(m^3 - 6m^2 + 12m - 8) - 4$
 $-2m^3 + 12m^2 - 24m + 16 - 4$
 $-2m^3 + 12m^2 - 24m + 12$

d) $-2(2x^3)^3 - 4$
 $-2(8x^9) - 4$
 $-16x^9 - 4$

② $(x+5)(3x^2 - x - 4)$
a) $3x^3 - x^2 - 4x + 15x^2 - 5x - 20$
 $3x^3 + 14x^2 - 9x - 20$

b) $\frac{3x^2 - x - 4}{x+5}$

c) $3(x+5)^2 - (x+5) - 4$
 $3(x^2 + 10x + 25) - x - 5 - 4$
 $3x^2 + 30x + 75 - x - 9$
 $3x^2 + 29x + 66$

d) $3x^2 - x - 4 + 5$
 $3x^2 - x + 1$

③ $\frac{2(x+h) - 3 - (2x-3)}{h} = \frac{2x+2h-3-2x+3}{h} = \frac{2h}{h} = 2$

④ $\frac{4(x+h)^2 + 7 - (4x^2 + 7)}{h} = \frac{4(x^2 + 2xh + h^2) + 7 - 4x^2 - 7}{h} = \frac{4x^2 + 8xh + 4h^2 - 4x^2}{h}$

$\frac{8xh + 4h^2}{h} = 8x + 4h$