S4 Homework

① a) $m = \frac{6-2}{5-1} = \frac{4}{4} = 1$

$y = mx + c$

$2 = 1 \times 1 + c$

$c = 1$

$y = x + 1$

b) $m = \frac{-3-4}{0-0} =$ undefined.

$x = 0$

c) $-5 = \frac{1}{2}(-3) + c$

$-5 = -1.5 + c$

$c = -3.5$

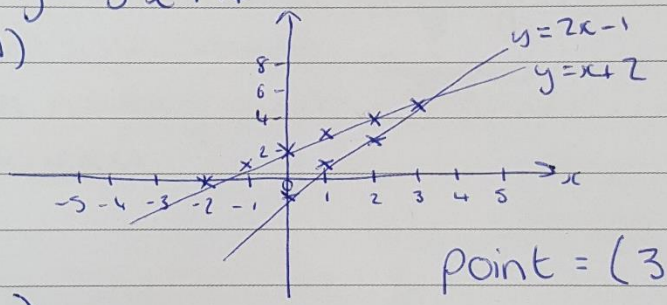
$y = \frac{1}{2}x - 3\frac{1}{2}$

d) $-1 = -3(5) + c$

$c = -1 + 15 = 14$

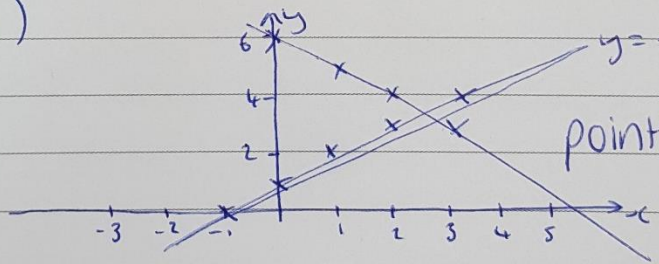
$y = -3x + 14$

② a)



point = (3, 5)

b)



point $(2\frac{1}{2}, 3\frac{1}{2})$

③ $3 \times$ ① $15g + 6h = 21$

$2 \times$ ② $4g - 6h = 36$

$19g = 57$

$g = 3$

use ① $15g + 4h = 21$

$45 + 4h = 21$

$g = \frac{3}{15} = \frac{1}{5}$

$15 + 2h = 7$

$2h = -8$, $h = -4$.

④ a) $x+y=18$ b) $7x+4y=84$

c) $-4 \times ①$ $-4x-4y=-72$

② $7x+4y=84$

$3x=12$

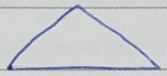
$x=4$

use ① $y=14$.

⑤ a) $2a^3+4a^2+8a-5a^2-10a-20 = 2a^3-a^2-2a-20$

b) $(g^2+g-6)(g-1) = g^3+g^2-6g-g^2-g+6$

$= g^3-7g+6$

⑥  $A = \frac{1}{2} \times 6 \times h = \frac{1}{2} \times w \times 4 = 2w$

 $A = L \times B = 9w$ Total area $= 11w$

$V = 2640 = 20 \times 11w$

$2640 = 220w$ width $= 12m$

⑦ a) $f(-3) = 20-2(-3)^2$

$= 20-2(9)$

$= 20-18 = 2$

b) $f(x) = -12 = 20-2x^2$

$-32 = -2x^2$

$16 = x^2$

$x = \pm 4$.