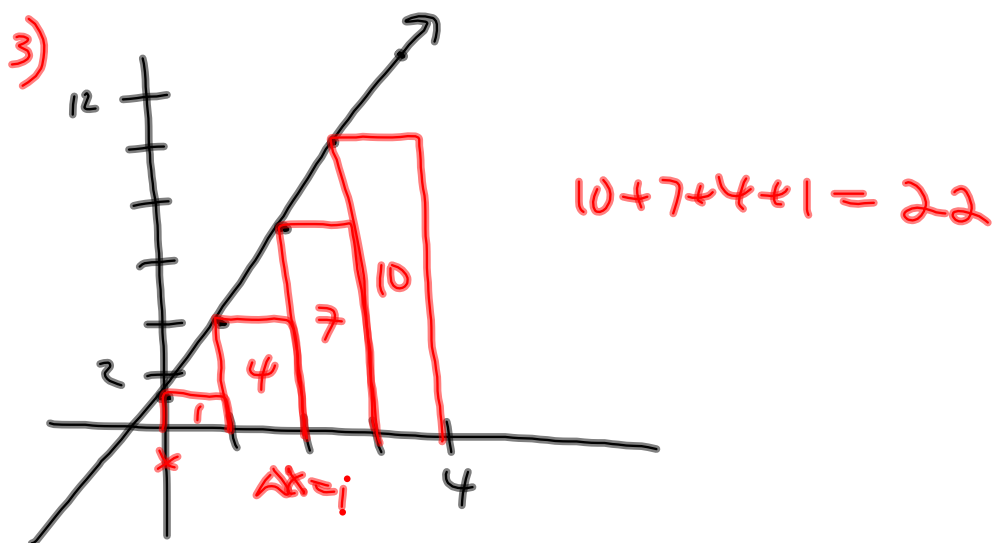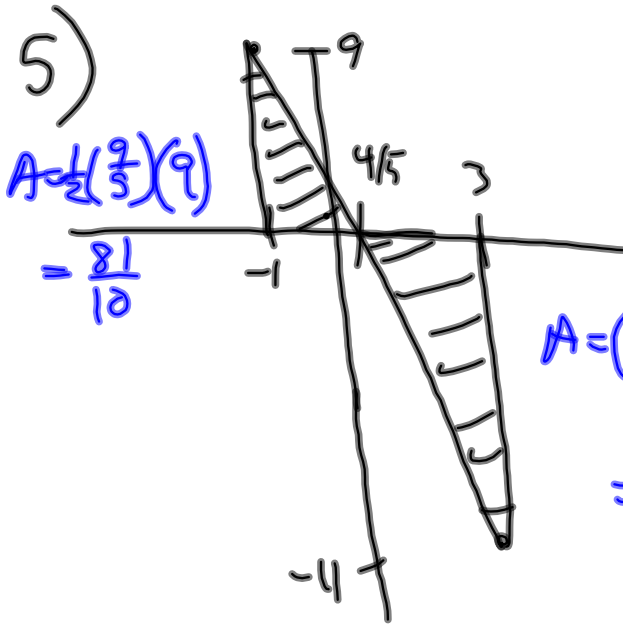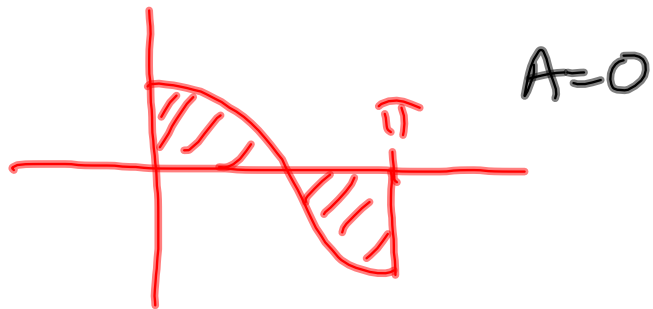1) $\displaystyle\sum_{n=1}^{6} \sin n\pi = \sin\pi + \sin 2\pi + \ldots + \sin 6\pi$

$$= 0 + 0 + \ldots + 0 = 0$$

2) $\displaystyle\sum_{k=1}^{100} (2^{k+1} - 2^k) = (2^2 - 2^1) + (2^3 - 2^2) + (2^4 - 2^3) + \ldots +$

$$= 2^{101} - 2 \qquad (2^{101} - 2^{100})$$

3)

12

2

10 + 7 + 4 + 1 = 22

4

7

10

1

x

$\Delta x = 1$

4

4) $\int_0^\pi \cos x \, dx$

$= 0$

$A = 0$

5)

$A = \frac{1}{2}\left(\frac{9}{5}\right)(9)$

$= \frac{81}{10}$

$A = \left(\frac{1}{2}\right)\left(\frac{11}{5}\right)(11)$

$= \frac{-121}{10}$

$y = 4 - 5x = 0$

$5x = 4$

$x = \frac{4}{5}$

$\int_{-1}^{3} (4 - 5x)\, dx = \frac{-40}{10}$

$= \boxed{4}$