Answer key of Test I (M1301) F'11

$\frac{23}{7} = 3.28\cdots$, $\pi = 3.14\cdots$, $\sqrt{9} = 3$, $\frac{0.1}{0.03} = \frac{10}{3} = 3.\dot{3}$, 3.3

(i) & (iii) because x's are not distinct.

(ii) is a constant function, (iv) is a linear function w/ $m = 2$.

$f(1-b) = -2(1-b)+1 = -2+2b+1 = 2b-1$

$X = \{-1, 0, 1, 2\}$

$m = 2$, $b = -1 \Rightarrow \therefore y = 2x-1$

$y+2 = 2(x-1) \Rightarrow y+2 = 2x-2 \Rightarrow y = 2x-4$

$2x+y = 3 \Rightarrow \therefore y = -2x+3 \Rightarrow \therefore m = \frac{1}{2} \Rightarrow \therefore y+2 = \frac{1}{2}(x-1)$

$\Rightarrow 2y+4 = x-1 \Rightarrow \underline{x-2y = 5}$.

$y = 1200t + 17000$

$y = \frac{-5}{3}x + 5$.

$y = kx \Rightarrow$ substitute $y = 24$ when $x = 16 \Rightarrow \therefore 24 = 16k \Rightarrow k = \frac{24}{16} = \frac{3}{2}$

$y = \frac{3}{2}x \Rightarrow$ substitute $x = 12 \Rightarrow y = \left(\frac{3}{2}\right)\cdot 12 = \underline{18}$

© vertical line test

$f(4) = 0$ ← y-value, ← x-value

$X = \{-5 \le x \le 8\}$, $Y = \{-6 \le y \le 6\}$

x-value at the intersection. $\therefore x = -2$

$f(1) = 3-1 = 2$

Read x-values!

#18. $2\frac{(x+5)}{2} - 2(x-1) = 2(3x+1)$

$\Rightarrow x+5-2x+2 = 6x+2 \Rightarrow -x+7 = 6x+2$

$\Rightarrow 5 = 7x \Rightarrow \underline{x = 5/7}$

#19. $\frac{2}{10}\cdot\frac{2(x-1)}{5} - \frac{5}{10}\cdot\frac{(8x+6)}{2} = 10.1$

$\Rightarrow 4(x-1) - 5(8x+6) = 10 \Rightarrow 4x-4-40x-30 = 10$

$\Rightarrow -36x-34 = 10 \Rightarrow -36x = 44 \Rightarrow \therefore x = \frac{-44}{36} = \frac{-11}{9}$

#20. $7x-(3x+1) > 2 \Rightarrow 7x-3x+1 > 2$

$\Rightarrow 4x > 1 \Rightarrow x > \frac{1}{4} \Leftrightarrow \underline{\left(\frac{1}{4}, \infty\right)}$