(A)

(1) $f(-2) = (-2)^2 - 2(-2) + 5$

$= 4 + 4 + 5 = 13$

Sol. D.

(2) $f(x) = \sqrt{3 - x}$

$3 - x \geq 0$

$3 \geq x$

$(-\infty, x]$

Domain is $\{x \mid x \leq 3\}$

Sol. C.

(3) $f(x) = 4x + 1$, $g(x) = 2x - 1$

$\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)} = \frac{4x + 1}{2x - 1}$

Sol. D

Domain is $\{x \mid x \neq \frac{1}{2}\}$.

(4)

$f(-10) = 6$

at $x = -10$.

Sol in A.

(5)

* Sol. is D.

6) $f(x)=\sqrt{2x}$; from 2 to 8

$a=2,\ b=8$

$$AVRC=\frac{f(b)-f(a)}{b-a}$$

$$ARC=\frac{f(8)-f(2)}{8-2}=\frac{\sqrt{2(8)}-\sqrt{2(2)}}{6}=\frac{4-2}{6}=\frac{2}{6}=\frac{1}{3}$$

Sol is B.

7) $C(x)=29x+590$

$C(98)=29(98)+590=3432$

Sol. is A

8)

$Y=0.90x-3.79$

Sol. is B

9) $f(x)=-x^2-2x+8$

Sol.

$f(x)=-(x^2+2x)+8$

$=-(x^2+2x+1)+8+1$

$=-(x+1)^2+9$

Standard form

$f(x)=a(x-h)^2+k$

Vertex (h,k)

axis of sym $x=h$

a) 2

b) $\frac{2}{2}=1$

c) $(1)^2=1$

Vertex $(-1,9)$

axis of sym $x=-1$

Intercepts $(2,0),(-4,0),(0,8)$

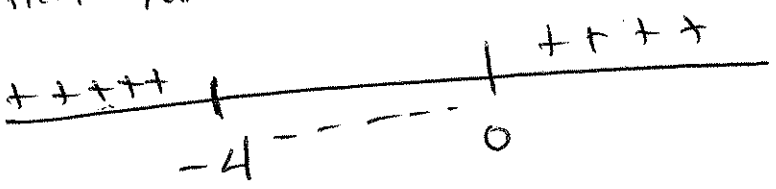
Sol is A.

Solve

10) $x^2+4x \geq 0$

$x(x+4) \geq 0$

Critical points $x=0$ and $x=-4$.



Test point -5

$(-5)(-5+4) = (-5)(-1) = 5 > 0$

Test point -1

$(-1)(-1+4) = (-1)(3) = -3 < 0$

Test point 1

$1(1+4) = (1)(5) = 5 > 0$

D

Sol. $\{x \mid x \leq -4$ or $x \geq 0\}$.

Sol. is ____

or $f(x) = x^2+4x$

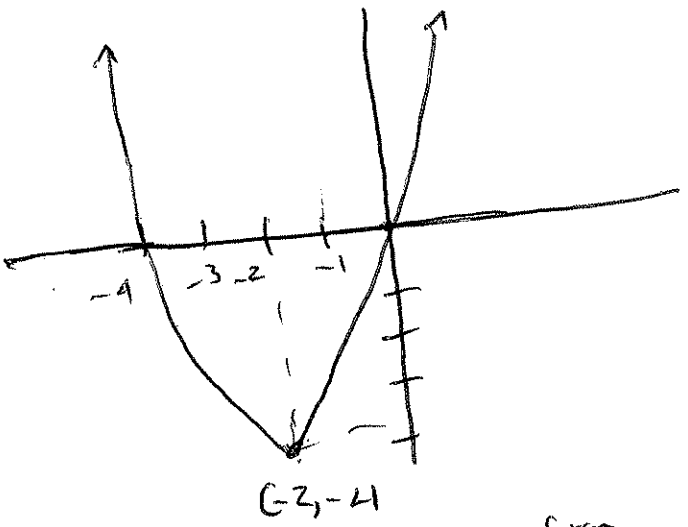
$= (x^2+4x+4) - 4$

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

a) 4

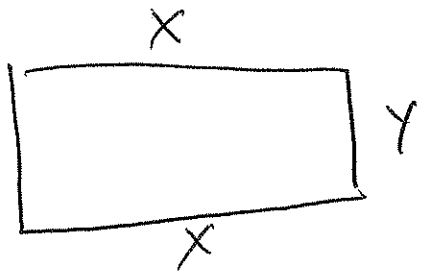
b) $\frac{4}{2} = 2$

c) $(2)^2 = 4$



Graph is above x-axis from $(-\infty, -4]$ or $[0, \infty)$.

11)



Perimeter $= 160$

$2x + 2y = 160$

$A = l \cdot w$

$A = xy$, solve for y from $2x + 2y = 160$,

$2y = 160 - 2x$

$y = \frac{160 - 2y}{2}$

$y = 80 - x$

$A = (x)(80 - x)$

$= 80x - x^2$

$= -x^2 + 80x$

Parabola . . downwards, it has a maximum on the vertex. Vertex $= \left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right)\right)$

$= \left(\frac{-80}{2(-1)}, f\left(\frac{-80}{2(-1)}\right)\right)$

$= \left(\frac{-80}{-2}, f\left(\frac{-80}{-2}\right)\right)$

$= (40, f(40))$

at $x = 40$ is max. dimensions 40 ft by 40 ft.

Sol is B

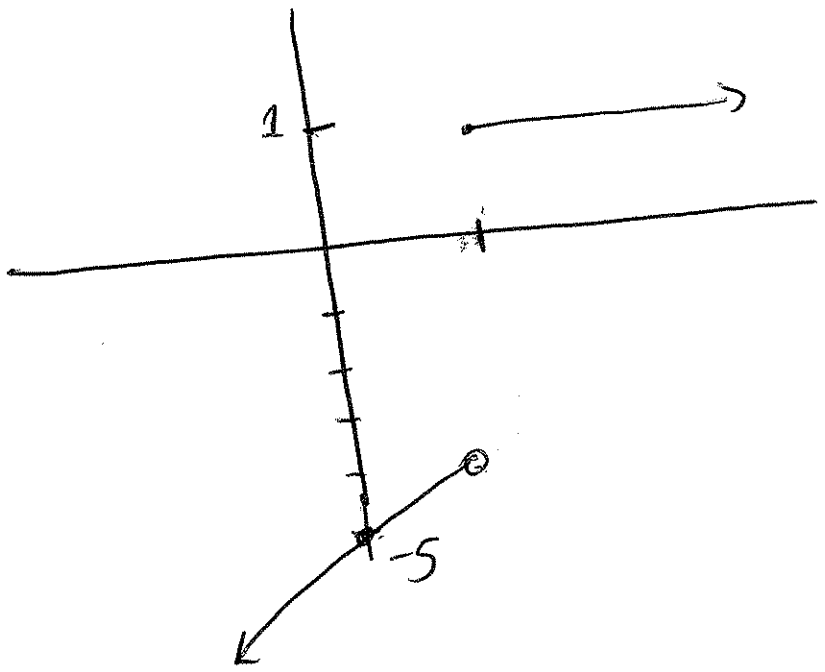
12) $f(x) = 9x - 2$

$$\frac{f(x+h)-f(x)}{h} = \frac{(9(x+h)-2)-(9x-2)}{h}$$

$$= \frac{9x+9h-2-9x+2}{h}$$

$$= \frac{9h}{h} = 9$$ sol is A

13) $f(x) = \begin{cases} x-5, & \text{if } x < 1 \\ 1, & \text{if } x \geq 1 \end{cases}$



sol is A

14) $f(x) = 4x^3$

$$f(-x) = 4(-x)^3 = -4x^3 = -f(x)$$

So it is odd

sol is B