Q4 Review 1

(1)

$4x - 12 + x + 2 = 90$

$5x - 10 = 90$

$5x = 100$

$\boxed{x = 20}$

(2)

$(x^2 + 4x + \underline{4}) + (y^2 - 10y + \underline{25}) = -20 + \underline{4} + \underline{25}$

$(x+2)^2 + (y-5)^2 = 9$

$\boxed{C(-2, 5) \quad r = 3}$

(3) $\sin t = \frac{\sqrt{3}}{2}$ $\quad \cos t = \frac{1}{2}$ $\quad \tan t = \frac{\sqrt{3}}{2} = \sqrt{3}$

$\frac{1}{2}$

(4)

$12(8) = 6x$

$96 = 6x$

$\boxed{16 = x = JD}$

(5) $y = 8 \sin\left(\frac{1}{2}x\right)$ (6) $y = \sin(\theta + 5)$

$\frac{2\pi}{4\pi} = K = \frac{1}{2}$

Q4 Review 2

hole = discontinuity $(-5, -\frac{1}{6})$

(1) $\frac{x+5}{(x-1)(x+5)}$ → hole at $x=-5$

$\frac{1}{x-1}$ ← $\frac{1}{-5-1} = \frac{1}{-6}$

vertical asymptote: $x=1$
horizontal asymptote: $y=0$

(2)

a) HA: $y=0$

VA: $x=-4, x=6$

b) hole $x=2 \rightarrow (2, -\frac{1}{3})$

$\frac{(3(2)+2)}{(2+4)(2-6)} = \frac{8}{6(-4)} = \frac{8}{-24} = -\frac{1}{3}$

c) $x \to \infty \quad y \to 0$
$x \to -\infty \quad y \to 0$

(3) $36 = 4\pi r^2$
$r = 1.69$

$V = \frac{4}{3}\pi(1.69)^3$

$V = 20.31 \text{ in}^3$

(4) B

(5) $3x+3 = 6x-18$
$21 = 3x$
$x = 7$

$7y-3 = (2(7)+4)$
$7y-3 = 18$
$7y = 21$
$y = 3$

Review 3

① $\frac{x+7}{(x+7)(x-3)} \cdot \frac{(x+5)(x+3)}{x+5} = \frac{x+3}{x-3}$

(A)

② $\frac{x+12}{x+12} \cdot \frac{2}{x} + \frac{1}{x+12} \cdot \frac{x}{x} = \frac{5x-8}{x(x+12)}$

$$\frac{2x+24+x}{x(x+12)} = \frac{5x-8}{x(x+12)}$$

$$3x+24 = 5x-8$$
$$32 = 2x$$
$$x = 16$$

(D)

③ 10 walls, $A = 142\ ft^2$ each
$= 1420\ ft^2$
2 gallon cans, 1 gallon → $150\ ft^2$

$$\frac{1420}{150} = 9.46 \text{ gallons}$$

(A) 5 cans

④

$\frac{2}{3}$	42
$\frac{1}{2}$	$5z+10$

$$2(5z+10) = 42$$
$$5z+10 = 21$$
$$5z = 11$$
$$z = 2.2$$

(B)

⑤ $\ell = r\theta$

$8\pi = r\left(\frac{2\pi}{3}\right)$

$r = 12$ cm

(D)

⑥ $y = 3\sin 4\theta$

↑ Ampl.

(B)

⑦ $y = -\sin 2\theta$

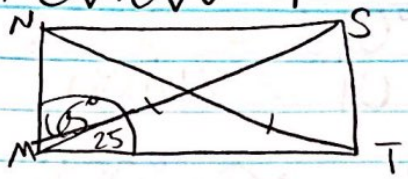
↑ K

Ampl. is always positive

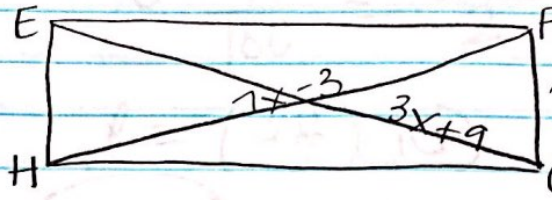
(B)

period $= \frac{2\pi}{2} = \pi$

Review 4

① 

25°

② 

$2x+4 \rightarrow 2(3)+4 = 10$

$7x-3 = 3x+9$

$4x = 12$

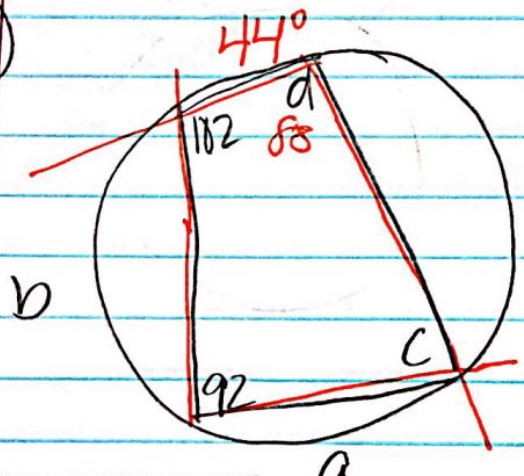
$x = 3$

$\boxed{EH = 10}$

③ a. $AB = 12$

$AC = 12$

b. $m\angle BZA = 27°$

④ 

$92 \times 2 = 184$

Opp ∠s Supplementary

$88 \times 2 = 176 = a + b$

$78 \times 2 = 156 = 44 + b$

$b = 112°$

$176 = a + 112°$

$\boxed{\begin{array}{l} a = 64° \\ b = 112° \\ c = 78° \\ d = 88° \end{array}}$

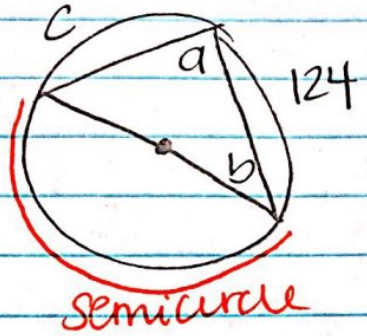
⑤ angle = 270° (house = 90°)
radius = 10

$$270° \cdot \frac{\pi}{180} = \frac{3\pi}{2}$$

$$l = \left(\frac{3\pi}{2}\right)(10) = 47.124$$

C. 48

⑥



$a = \frac{1}{2}(180)$

$c + 124 = 180°$

$b = \frac{1}{2}(56)$

$a = 90°$
$b = 28°$
$c = 56°$