Autoevaluacion intento 1:

1) $\left(\frac{\frac{9}{16}}{\left(3-\frac{5}{2}\right)^3}-\left(1-\frac{35}{8}\right)^{\frac{1}{3}}\right)^{-\frac{1}{2}}=$

$\left(\frac{\frac{9}{16}}{\left(\frac{1}{2}\right)^3}-\left(\frac{(1.8)-35}{8}\right)^{\frac{1}{3}}\right)^{-\frac{1}{2}}=$

$\left(\frac{\frac{9}{16}}{\frac{1}{8}}-\left(-\frac{27}{8}\right)^{\frac{1}{3}}\right)^{-\frac{1}{2}}$

$\left(\frac{9}{16}\cdot\frac{8}{1}-\left(\frac{\sqrt[3]{-27}}{\sqrt[3]{8}}\right)\right)^{-\frac{1}{2}}$

$\left(\frac{\frac{9}{\cancel{72}}}{\frac{\cancel{16}}{2}}-\left(-\frac{3}{2}\right)\right)^{-\frac{1}{2}}$

$\left(\frac{9}{2}+\frac{3}{2}\right)^{-\frac{1}{2}}$

$\left(\frac{9+3}{2}\right)^{-\frac{1}{2}}$

$\left(\frac{\frac{6}{\cancel{12}}}{\frac{\cancel{2}}{1}}\right)^{-\frac{1}{2}}\longrightarrow\left(\frac{1}{6}\right)^{\frac{1}{2}}=\frac{\sqrt{1}}{\sqrt{6}}=\frac{1}{\sqrt{6}}$

C.A

$\frac{3}{1}-\frac{5}{2}=\frac{(2\cdot3)-5}{2}=\frac{6-5}{2}$

$=\frac{1}{2}$

$\sqrt[3]{-27}=\overbrace{-3}^{9}\cdot\overbrace{-3}^{-27}\cdot-3$

2) Determinar el valor de b para el cual el polinomio T(x)=−x^3+bx^2−1/2x+10 tiene resto en la división por x+2

$$T(x) = -x^3 + bx^2 - \frac{1}{2}.x + 10$$

Como $T(x)$ tiene un resto de -1 al ser dividido por $(x+2)$ entonces $T(-2) = -1$

$$-(-2)^3 + b.(-2)^2 - \frac{1}{2}.(-2) + 10 = -1$$

$$-(-8) + b.4 - (-1) + 10 = -1$$

$$+8 + b.4 + 1 + 10 = -1$$

$$b.4 = -1 - 8 - 1 - 10$$

$$\frac{b}{4}.4 = \frac{-20}{4}$$

$$b = -5$$

3) $\sqrt{1 - \frac{3}{4}} \cdot (-2^2)$

$$\sqrt{\frac{(1.4)-3}{4}} \cdot -4$$

$$\frac{\sqrt{1}}{\sqrt{4}} \cdot -4$$

$$\frac{1}{2} \cdot -4$$

$$\frac{-4^{2}}{\frac{2}{1}} \longrightarrow -2$$

4) $M(x) = -5x^2 + 2x^3 + 1$ divisible por $\left(x - \frac{1}{2}\right)$?

$a = \frac{1}{2}$

$M(a) = R(x)$ ∴ si $M(a) = 0$, $M(x)$ es divisible por $\left(x - \frac{1}{2}\right)$

$$M\left(\tfrac{1}{2}\right) = -5 \cdot \left(\tfrac{1}{2}\right)^2 + 2 \cdot \left(\tfrac{1}{2}\right)^3 + 1$$

$$= -5 \cdot \tfrac{1}{4} + 2 \cdot \tfrac{1}{8} + 1$$

$$= \frac{-5}{4} + \frac{\cancel{2}^{1}}{\cancel{8}^{4}} + 1$$

$$= \frac{-5 + 1 + (1 \cdot 4)}{4}$$

$$= \frac{-5 + 5}{4}$$

$$= \frac{0}{4}$$

$$= 0$$

$M(x)$ es divisible por $\left(x - \frac{1}{2}\right)$

5) $P(x) = 3x^2 + x - 5$

$Q(x) = -x + 4$

$R(x) = 5x + x^2$

a) $3.(Q(x))^2 - P(x) = (-x+4)^2 - (3x^2 + x - 5)$

$3.((-x)^2 + 16) - (3x^2 + x - 5)$

$3.(-x)^2 + 3.16 - (3x^2 + x - 5)$

$3.(-x)^2 + 48 - (3x^2 + x - 5)$

$0.x^2 - x + 53$

b) $(P(x))^2 = (3x^2 + x - 5)^2$

$3^2.x^{2.2} + x^2 + (-5)^2$

$9.x^4 + x^2 + 25$

c) $P(x) - 2R(x) = 3x^2 + x - 5 - (2.(x^2 + 5x))$

$= 3x^2 + x - 5 - (2.x^2 + 2.5.x)$

$3x^2 + x - 5 - (2.x^2 + 10.x)$

$1x^2 - 9x - 5$

d) $Q(x) + \frac{R(x)}{x} = -x+4 + \frac{x^2+5x}{x}$

$-x^1+4 + x^1+5$

$0.x^1 + 9$

$+9$

C.A.

$x^2 : x^1 = x^{2-1} = x^1$

$5x^1 : 1.x^1 = 5.x^{1-1} = 5.x^0$

$\frac{x^2+5x}{x} = x^1 + 5.x^0$