NO 5.

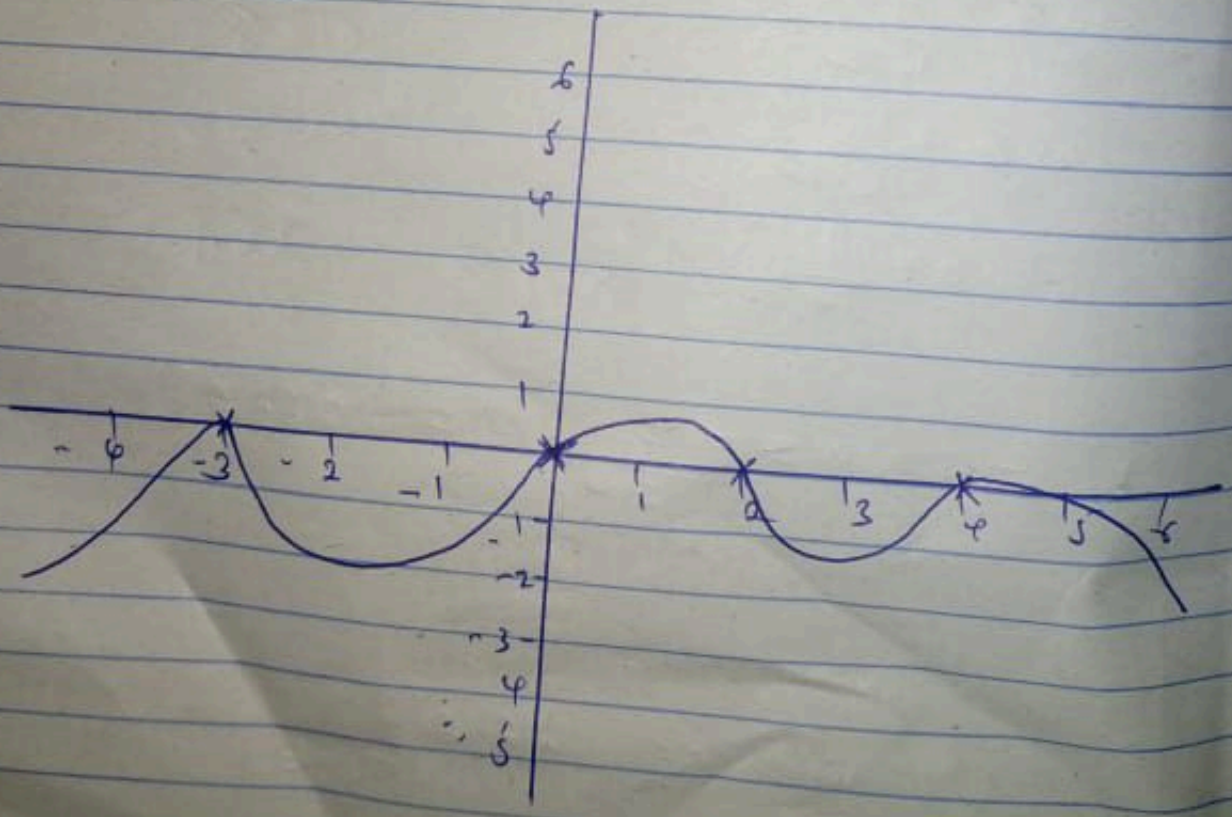
$g(x) = -(x-4)^2 x (x+3)^3 (x-2)$

$= -x^7 + x^6 + 31x^5 - 13x^4 - 306x^3 + 86x$

Degree = 7

x intercept (4,0), (0,0) (-3,0), (2,0)

y intercept (0,0)



NO 6

$128x^3 + 250$

$2(64x^3 - 125)$

$(a-b)(a^2+ab+b^2)$

$(4x-5)\ 16x^2+20x+25$

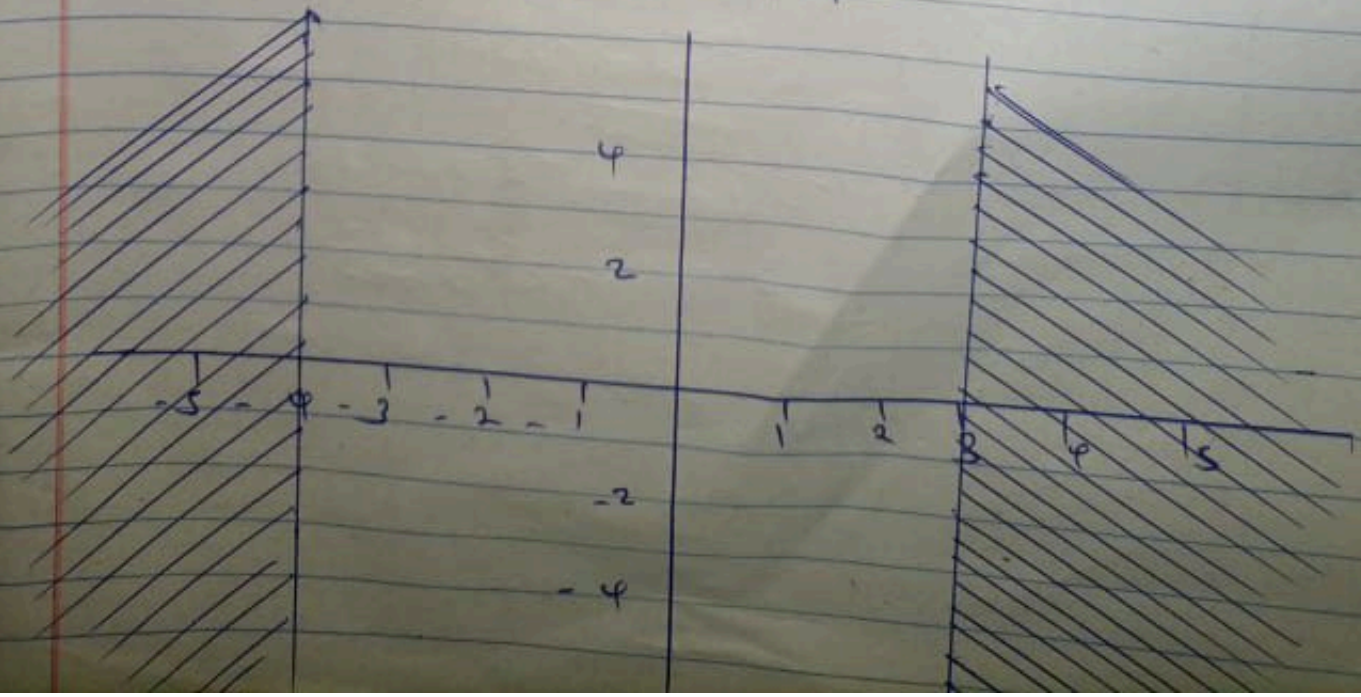
$2(4x-5)(16x^2+20x+25)$

NO 7.

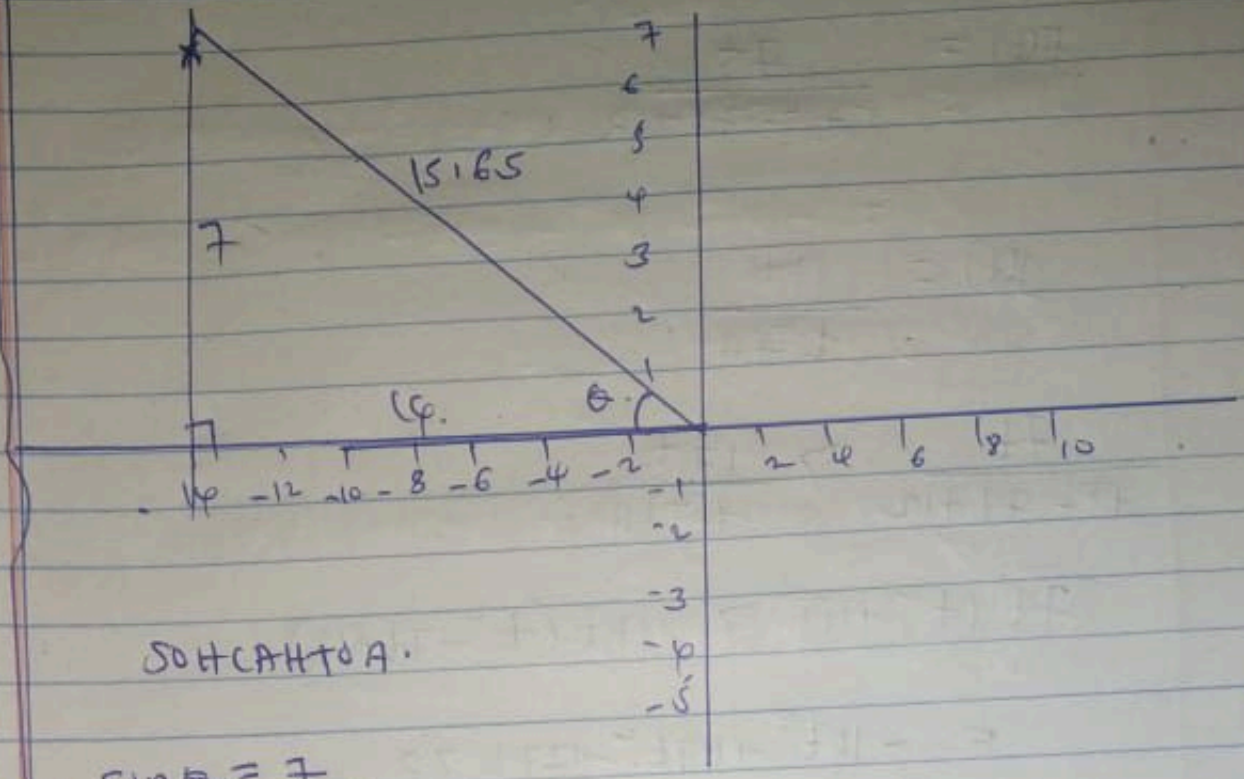
$-x^2 - x + 12 \leq 0$

Factor $= -(x-3)(x+4) \leq 0$

$x \leq -4,\ x \geq 3$



No 11



SOHCAHTOA.

$\sin\theta = \frac{7}{15.65}$

$\cos\theta = \frac{14}{15.65}$

$\tan\theta = \frac{7}{14}$

b $= (i) \sin\theta = \frac{7}{15.65} = 26.6°$

(ii) radian. $\frac{26.6 \times \pi}{180}$

$= 0.46$ rads.

NO 10

$$F(t) = \frac{7t}{t^2 - 7t + 12}$$

$$g(t) = \frac{17t}{t^2 + 11}$$

$$\frac{7t}{t^2 - 7t + 12} > \frac{17t}{t^2 + 11}$$

$$7t(t^2 + 11) > 17t(t^2 - 7t + 12)$$

$$= -10t^3 + 119t^2 - 127t > 0$$

$$t = \frac{119 - 3\sqrt{1009}}{20} \quad \text{or} \quad \frac{119 + 3\sqrt{1009}}{20}$$

$$1.18528 \quad t < 10.7147$$

For time between 1.18528 days and 10.7147 days bacteria count in tap water will exceed bacterial count in pound water.

NO 8.

$-5x^5 + 6x^4 = 0$

Factor = $-x^4(5x-6)$

$-x^4(5x-6) = 0$

$x = 0$ or $5x - 6 = 0$

$x = 0, \quad x = \frac{6}{5}$

NO 9.

Horizontal Asymptote = $y = 4$	x-intercept = $(\frac{\sqrt{5}}{2}, 0)$, $(-\frac{\sqrt{5}}{2}, 0)$ y-intercept = $(0, -\frac{5}{6})$