

Start here for
Question Number: **1**

a. $x^2 = 4x$

$$\frac{x^2}{x} = 4$$

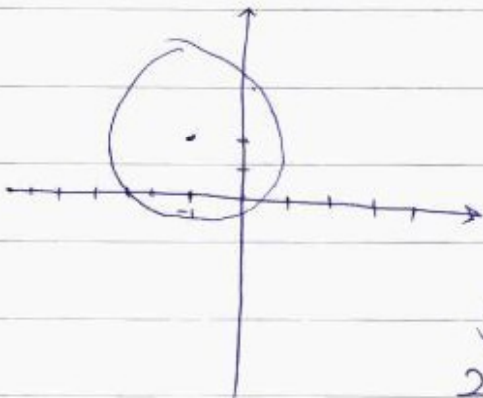
$$x = 4$$

b. $\frac{1}{\sqrt{5}-2} \times \frac{\sqrt{5}+2}{\sqrt{5}+2}$

$$= \frac{\sqrt{5}+2}{5-2}$$

$$a=2 \quad b=1$$

c.



$$y^2 + x^2 = \sqrt{5}$$

$$2y^2 - x^2 = \sqrt{5}$$

~~$$y_1 - y_2 = m(x_1 - x_2)$$~~

d. $|2x+3| = 9$

$$-2x - 3 = 9$$

$$-2x = 12$$

$$x = \frac{12}{2}$$

$$x = -6$$

OR.

$$2x + 3 = 9$$

$$2x = 6$$

$$x = 3$$

e. $x^2 \tan x$.

$$u = x^2 \quad v = \tan x$$

$$u' = 2x \quad v' = \sec^2 x$$

$$\frac{u'v + v'u}{v^2}$$

$$\frac{2x \tan x + x^2 \sec^2 x}{(\tan x)^2}$$

g. $f(x) = \sqrt{x-8}$

~~$$f'(x) = \frac{1}{2\sqrt{x-8}}$$~~

~~$$f''(x) = -\frac{1}{4(x-8)^{3/2}}$$~~

~~$$f'''(x) = \frac{3}{8(x-8)^{5/2}}$$~~

All real; $x > 8$.

f. ~~$$S_n = \frac{a(1-r^{n+1})}{1-r}$$~~

$$1 - \frac{1}{3} + \frac{1}{9} - \frac{1}{27} + \dots$$

$$a = \frac{1}{3} \quad r = -\frac{1}{3}$$

~~$$S_\infty = \frac{a(1-r^n)}{1-r}$$~~
$$\frac{a(1-r^n)}{1-r}$$

~~$$S = \frac{1/3(1-(-1/3)^n)}{1-(-1/3)}$$~~

$$S = \frac{1(1-(-1/3))}{1-(-1/3)}$$

$$= 1$$

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