

### QUESTION 1

$$a/ \frac{\sqrt{3^2 + 12^2}}{\sqrt{231 - 12^2}}$$

$$= \frac{\sqrt{153}}{\sqrt{87}}$$

$$= 1.33 \text{ (3 sig. fig.)}$$

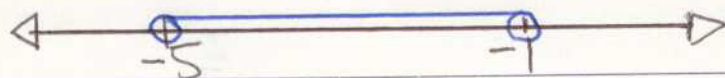
$$b/ |x+3| < 2$$

$$x+3 < 2$$

$$x < -1$$

$$-x-3 < 2$$

$$x > -5$$



$$c/ x^2 - 2x - 8 = 0$$

$$(x-4)(x+2) = 0$$

$$\therefore x=4, x=-2$$

$$x-8$$

$$+2$$

$$d/ \int 3 + \frac{1}{x} dx$$

$$= 3x + \ln|x| + C$$



$$e/ \frac{x}{x^2-4} + \frac{2}{x-2}$$

$$= \frac{x(x-2) + 2(x^2-4)}{(x^2-4)(x-2)}$$

$$= \frac{x^2 - 2x + 2x^2 - 8}{x^3 - 2x^2 - 4x + 8}$$

$$= \frac{3x^2 - 2x - 8}{x^3 - 2x^2 - 4x + 8}$$

f/ let  $x =$  original price (\$)

$$1.1x = 979$$

$$\therefore x = 890$$

$\therefore$  The original price was \$890.