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NEW SOUTH WALES

# Question 1.

a) $\sqrt{\dfrac{9+144}{87}}$

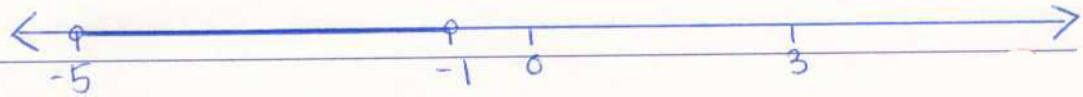
$= \sqrt{1.75862069}$.

$= 1.33$ (3 sig figs).

b) $|x+3|<2$.

$x+3<2$ or $x+3>-2$.

$x<-1$ $\qquad$ $x>-5$.




c) $x^2-2x-8=0$.

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

$x+2=0$ and $x-4=0$.

$x=-2$ $\qquad$ $x=4$.

$\therefore$ $x=-2$ or $4$.

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d) $3 + \frac{1}{x}$, find primitive.

$= 3x + \ln x$

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

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

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

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

$= \frac{3x+4}{(x+2)(x-2)}$

f) \$979 × 90% = \$881.11

∴ \$881.11 was the original price of the video recorder.