M8 -6 days to go!

6 Joe was changing the subject of the formula

$$A = \frac{3b}{\sqrt{c}} \qquad \text{to } c$$

Joe has written $A = \frac{3b}{\sqrt{c}}$

Line 1 $A^2 = \frac{3b^2}{c}$ $(3b)^2 = 9b^2$

Line 2 $A^2c = 3b^2$

Line 3 $c = \frac{3b^2}{A^2}$

(a) Identify the line where Joe made a mistake.

Answer line 1 [1]

(b) Write down the correct answer:

Answer $c = \frac{9b^2}{A^2}$ [1]

Convert $0.3\dot{4}$ to a fraction.
Give your answer in its simplest form.

$x = 0.3444\ldots$

$10x = 3.4444$

$100x = 34.4444$

$100x - 10x = 990x$

$34.4444 - 3.4444 = 31$

$990x = 31$

$x = \frac{31}{990}$

.....

(3)

Evaluate

$$\left(\frac{49}{100}\right)^{-\frac{1}{2}}$$

inverse ↓ ↑

Inverse $= \frac{100}{49}$

$\sqrt{\quad} = \sqrt{\frac{100}{49}} = \frac{10}{7}$

.....

(2)

A is directly proportional to B^2
When A = 50, B = 5
(a) Find a formula for A in terms of B.
(b) Find the value of A when B = 3
(c) Find the value of B when A = 200

$A \propto B^2$

so

$A = kB^2$

rewrite → $\boxed{A = 2B^2}$

$50 = k \times 5^2$

$50 = 25k$

$2 = k$

$B = 3$

$A = 2 \times 3^2$

$A = 2 \times 9$

$A = 18$

$A = 200$

$200 = 2 \times B^2$

$100 = B^2$

$10 = B$