

5. A student's attempt to solve the equation  $2\log_2 x - \log_2 \sqrt{x} = 3$  is shown below.

$$2\log_2 x - \log_2 \sqrt{x} = 3$$

$$2\log_2 \left( \frac{x}{\sqrt{x}} \right) = 3$$

using the subtraction law for logs

$$2\log_2 (\sqrt{x}) = 3$$

simplifying

$$\log_2 x = 3$$

using the power law for logs

$$x = 3^2 = 9$$

using the definition of a log

(a) Identify two errors made by this student, giving a brief explanation of each.

(2)

(b) Write out the correct solution.

(3)