



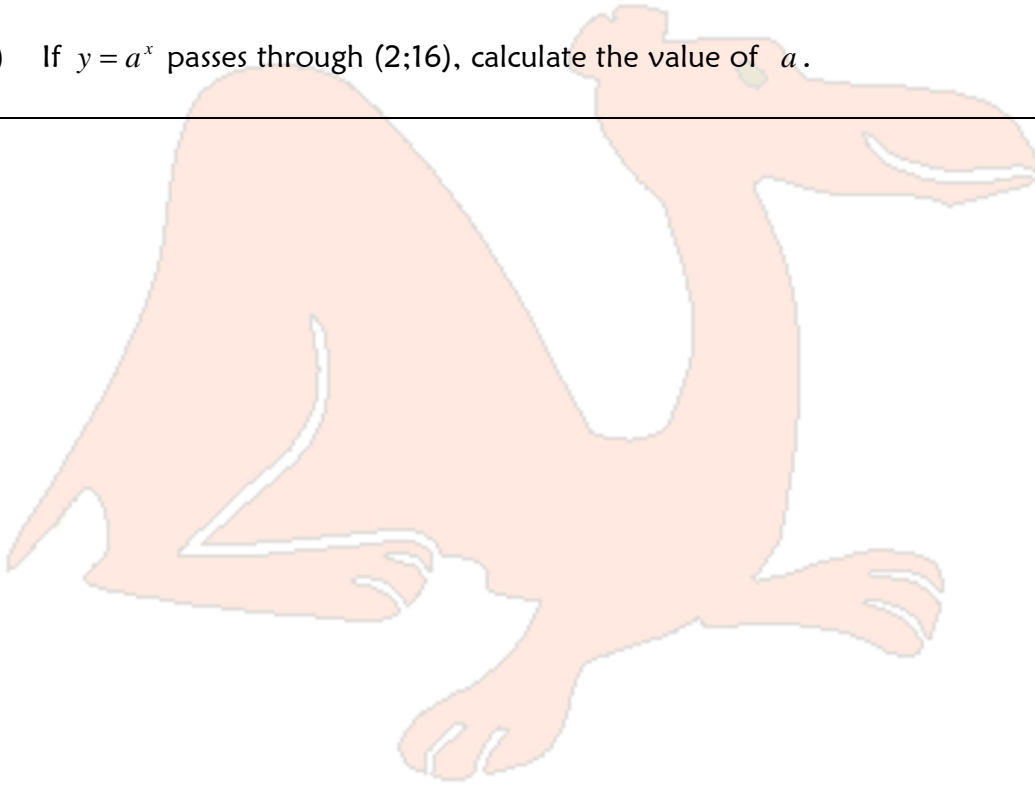
CAMI Mathematics: Grade 12

12.1 Exponential and logarithmic functions

12.1 Exponential functions

1. Properties of the exponential function

- (a) Calculate the y-intercept of $y = 4^x$.
- (b) If $y = a^x$ passes through (5;32), calculate the value of a .
- (c) Calculate the y-intercept of $y = \left(\frac{1}{2}\right)^x$.
- (d) If $y = a^x$ passes through (2;25), calculate the value of a .
- (e) If $y = a^x$ passes through (2;16), calculate the value of a .





MEMO

1. Properties of the exponential function [6.7.1]

(a) $y = 4^x$
 $x = 0$:
 $y = 4^0$
 $y = 1$
 $\therefore (0;1)$

(b) $y = a^x$
 $32 = a^5$
 $2^5 = a^5$
 $\therefore a = 2$

(c) $y = \left(\frac{1}{2}\right)^x$
 $x = 0$:
 $y = \left(\frac{1}{2}\right)^0$
 $y = 1$
 $\therefore (0;1)$

(d) $y = a^x$
 $25 = a^2$
 $5^2 = a^2$
 $\therefore a = 5$

(e) $y = a^x$
 $16 = a^2$
 $4^2 = a^2$
 $\therefore a = 4$

