

PRACTICE QUESTIONS 5

Solve the following equations

a) $(x + 1)^3 - (x - 1)^3 = (2x - 1)(3x + 2)$ $x = 4$

b) $(2x - 1)^3 + (2x + 3)^2 + (4x + 1)(2x - 1) = (2x + 1)(4x^2 - 2x - 1)$ $x = \frac{2}{5}$

Calculate

a) $\log_3 81\sqrt[3]{3}$

b) $\log_2 \frac{1}{4\sqrt[3]{2}}$

c) $\log_{\frac{1}{8}} \sqrt[3]{4}$

d) $\log_{\sqrt[5]{8}} \frac{1}{4}$

e) $\log_{\sqrt[3]{5}} 5\sqrt{5}$

f) $\log_{\pi} 1$

Express in terms of a and b , where $a = \log 8$ and $b = \log 6$:

a) $\log 24$

b) $\log 108$

c) $\log 120$

d) $\log_2 30$