Answer key

The method: Solving with the definition

log base b of y = n means $b^n = y$. Rewrite, then solve.

$\log_2(2x - 12) = 2 \quad x = 8$

$2x - 12 = 4$ rewrite: $2^2 = 4$

$2x = 16$

$x = 8$ divide by 2

$\log x = 2 \quad x = 100$

$x = 10^2$ log base 10 of x = 2 means $10^2 = x$

$x = 100$

Problems 1 and 2 worked out · Version 0A

$\log_5(2x - 29) = 1 \quad x = 17$

$2x - 29 = 5$ rewrite: $5^1 = 5$

$2x = 34$

$x = 17$ divide by 2

$\log_2 x = 3 \quad x = 8$

$x = 2^3$ log base 2 of x = 3 means $2^3 = x$

$x = 8$

Solving with the definition · Version 0A

1) x = 17 2) x = 8 3) x = −6 4) x = 256
5) x = −1 6) x = 8 7) x = 3 8) x = 81 9) x = 12
10) x = 4 11) x = −9 12) x = 16 13) x = 0
14) x = −9 15) x = 9 16) x = −1 17) x = 0
18) x = 64 19) x = 5 20) x = 15 21) x = −8
22) x = −1 23) x = 4 24) x = 6 25) x = 10
26) x = 10