

KLASKAMER 10

GRAAD 10 WISKUNDE: EPISODE 27

EKSPONENTE 2

VRAAG 1:

Los op vir x in elkeen van die volgende:

a. $4 \cdot 8^{x-1} = 16^x$ (5)

b. $3^{x+1} - 3^{x-1} - 24 = 0$ (5)

BLIKslim

TOTAAL: 10 PUNTE

GRAAD 10 WISKUNDE: EPISODE 27 (MEMORANDUM)

EKSPONENTE 2

VRAAG 1

a) $4 \cdot 8^{x-1} = 16^x$

$$2^2 \cdot (2^3)^{x-1} = 2^{4x} \checkmark$$

$$2^2 \cdot 2^{3x-3} = 2^{4x} \checkmark$$

$$2^{3x-1} = 2^{4x} \checkmark$$

$$\therefore 3x - 1 = 4x \checkmark$$

$$\therefore -1 = x \checkmark$$

b) $3^{x+1} - 3^{x-1} - 24 = 0$

$$3^x 3^1 - 3^x 3^{-1} = 24 \checkmark$$

$$3^x (3^1 - 3^{-1}) = 24 \checkmark$$

$$3^x \left(3 - \frac{1}{3}\right) = 24$$

$$3^x \left(\frac{8}{3}\right) = 24 \checkmark$$

$$3^x = 9 \checkmark$$

$$3^x = 3^2 \therefore x = 2 \checkmark$$