

# KLASKAMER 10

## GRAAD 11 WISKUNDE: EPISODE 8

### EKSPONENTE EN WORTELVORME 2

VRAAG 1:

Vereenvoudig:  $\frac{2^{x+1} - 3 \cdot 2^{x-4}}{2^{x-1} + 6 \cdot 2^x}$

(5)

VRAAG 2:

Los op vir  $x$ :  $2^{x+1} - 2^{x-1} = 6\sqrt{2}$

(5)

**BLIKslim**

TOTAAL: 10 PUNTE

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# GRAAD 11 WISKUNDE: EPISODE 8 (MEMORANDUM)

## EKSPONENTE EN WORTELVORME 2

### VRAAG 1

$$\begin{aligned} & \frac{2^{x+1} - 3 \cdot 2^{x-4}}{2^{x-1} + 6 \cdot 2^x} \\ &= \frac{2^x \cdot 2^1 - 3 \cdot 2^x \cdot 2^{-4}}{2^x \cdot 2^{-1} + 6 \cdot 2^x} \quad \checkmark \checkmark \\ &= \frac{2^x(2 - 3 \cdot 2^{-4})}{2^x(2^{-1} + 6)} \quad \checkmark \\ &= \frac{2 - \frac{3}{16}}{\frac{1}{2} + 6} \quad \checkmark \\ &= \frac{29}{104} \quad \checkmark \end{aligned}$$

### VRAAG 2

$$\begin{aligned} 2^{x+1} - 2^{x-1} &= 6\sqrt{2} \\ \therefore 2^x \cdot 2^1 - 2^x \cdot 2^{-1} &= 6\sqrt{2} \quad \checkmark \\ \therefore 2^x(2 - 2^{-1}) &= 6\sqrt{2} \\ \therefore 2^x\left(2 - \frac{1}{2}\right) &= 6\sqrt{2} \quad \checkmark \\ \therefore 2^x\left(\frac{3}{2}\right) &= 6\sqrt{2} \\ \therefore 2^x &= 4\sqrt{2} \quad \checkmark \\ \therefore 2^x &= 2^2 \cdot 2^{\frac{1}{2}} \quad \therefore 2^x = 2^{\frac{5}{2}} \quad \checkmark \\ \therefore x &= \frac{5}{2} \quad \checkmark \end{aligned}$$

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