

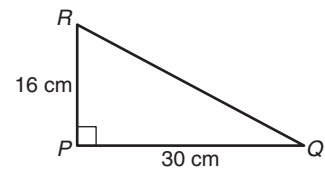
# Diagnostische toets

bladzijde 30

**1** a  $100 + 400 = ?$   
 $? = 500 \text{ mm}^2$

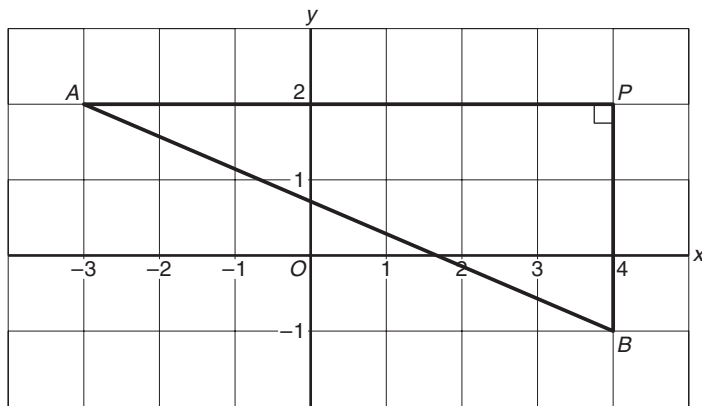
b  $150 + ? = 625$   
 $\boxed{-150}$     $\boxed{-150}$   
 $? = 475 \text{ mm}^2$

**2**  $\angle P = 90^\circ$ , dus  $PQ^2 + PR^2 = QR^2$   
 $30^2 + 16^2 = QR^2$   
 $900 + 256 = QR^2$   
 $QR^2 = 1156$   
 $QR = \sqrt{1156} = 34 \text{ cm}$

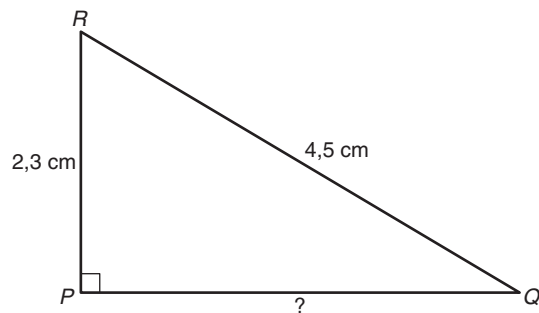


**3** voorstag:  $v$   
 $5^2 + 6^2 = v^2$   
 $25 + 36 = v^2$   
 $v^2 = 61$   
 $v = \sqrt{61} \approx 7,8 \text{ m}$   
achterste stag:  $a$   
 $8^2 + 6^2 = a^2$   
 $64 + 36 = a^2$   
 $a^2 = 100$   
 $a = \sqrt{100} \approx 10 \text{ m}$   
totale lengte stagen  $= 10 + 7,8 = 17,8 \text{ m}$

**4** Recht onder  $D$  ligt punt  $P$ .  
 $AP = AB - CD = 4,2 - 1,5 = 2,7$   
In de rechthoekige driehoek  $APD$  geldt:  
 $\angle P = 90^\circ$ , dus  $AP^2 + PD^2 = AD^2$   
 $2,7^2 + 3,1^2 = AD^2$   
 $7,29 + 9,61 = AD^2$   
 $AD^2 = 16,9$   
 $AD = \sqrt{16,9} \approx 4,1 \text{ cm}$   
Omtrek  $ABCD \approx 4,2 + 3,1 + 1,5 + 4,1 = 12,9 \text{ cm}$

**5**

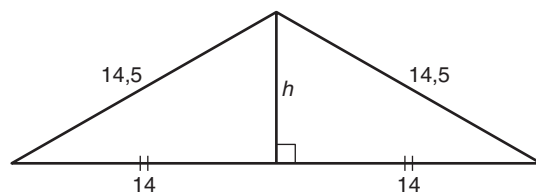
$$\begin{aligned}
 AP^2 + BP^2 &= AB^2 \\
 7^2 + 3^2 &= AB^2 \\
 49 + 9 &= AB^2 \\
 AB^2 &= 58 \\
 AB &= \sqrt{58} \approx 7,62
 \end{aligned}$$

**6**

$$\begin{aligned}
 \angle P = 90^\circ, \text{ dus } PR^2 + PQ^2 &= QR^2 \\
 2,3^2 + PQ^2 &= 4,5^2 \\
 5,29 + PQ^2 &= 20,25 \\
 \boxed{-5,29} & \quad \boxed{-5,29} \\
 PQ^2 &= 14,96 \\
 PQ &= \sqrt{14,96} \approx 3,9 \text{ cm}
 \end{aligned}$$

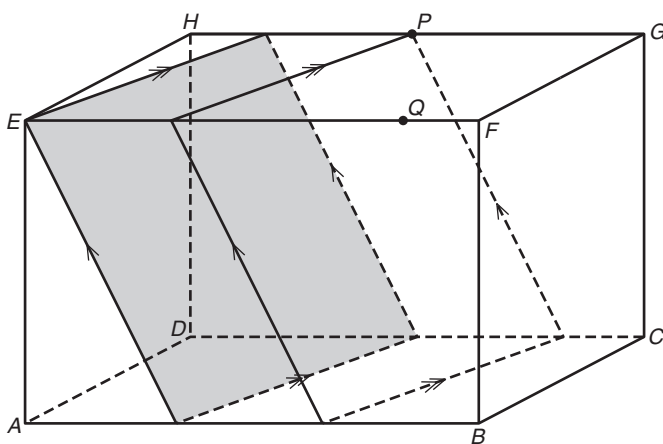
**7**

$$\begin{aligned}
 14^2 + h^2 &= 14,5^2 \\
 196 + h^2 &= 210,25 \\
 \boxed{-196} & \quad \boxed{-196} \\
 h^2 &= 14,25 \\
 h &= \sqrt{14,25} \approx 3,8 \text{ m} \\
 \text{hoogte hangar} &\approx 4,5 + 3,8 = 8,3 \text{ m}
 \end{aligned}$$

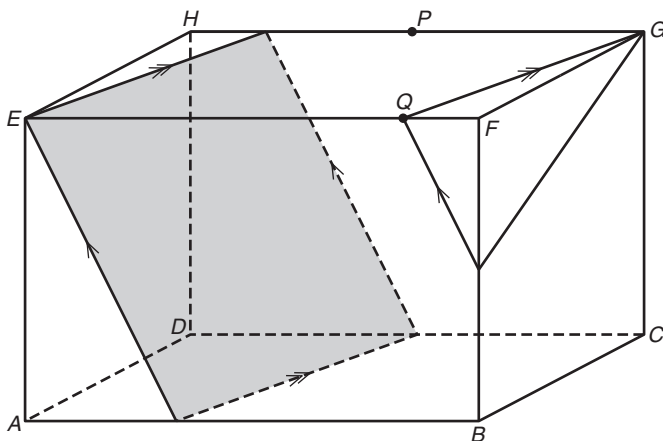


- 8** a  $\angle D = 90^\circ$ , dus  $AD^2 + CD^2 = AC^2$   
 $35^2 + 12^2 = AC^2$   
 $1225 + 144 = AC^2$   
 $AC^2 = 1369$   
 $AC = \sqrt{1369} = 37$   
 $\angle D = 90^\circ$ , dus  $BD^2 + CD^2 = BC^2$   
 $5^2 + 12^2 = BC^2$   
 $25 + 144 = BC^2$   
 $BC^2 = 169$   
 $BC = \sqrt{169} = 13$
- b  $AC^2 + BC^2 = 37^2 + 13^2 = 1538$   
 $AB^2 = (35 + 5)^2 = 1600$  }  $AC^2 + BC^2 \neq AB^2$ , dus is  $\triangle ABC$  niet rechthoekig.

- 9** a



- b



- 10** a Schets eerst rechthoek  $BCGF$  en bereken  $CF$ .

$$\angle B = 90^\circ, \text{ dus } BC^2 + BF^2 = CF^2$$

$$5^2 + 4^2 = CF^2$$

$$25 + 16 = CF^2$$

$$CF^2 = 41$$

$$\angle F = 90^\circ, \text{ dus } CF^2 + EF^2 = CE^2$$

$$41 + 4^2 = CE^2$$

$$41 + 16 = CE^2$$

$$CE^2 = 57$$

$$CE = \sqrt{57} \approx 7,5 \text{ cm}$$

- b  $AP$  ligt in diagonaal vlak  $AFGD$

Schets voorvlak  $ABFE$  en bereken  $AF$ .

$$\angle B = 90^\circ, \text{ dus } AB^2 + BF^2 = AF^2$$

$$6^2 + 4^2 = AF^2$$

$$36 + 16 = AF^2$$

$$AF^2 = 52$$

$$\angle F = 90^\circ, \text{ dus } AF^2 + FP^2 = AP^2$$

$$52 + 2,5^2 = AP^2$$

$$52 + 6,25 = AP^2$$

$$AP^2 = 58,25$$

$$AP = \sqrt{58,25} \approx 7,6 \text{ cm}$$

- c  $\angle H = 90^\circ$ , dus  $AH^2 + HQ^2 = AQ^2$  ( $AH^2 = CF^2 = 41$ )

$$41 + 2^2 = AQ^2$$

$$41 + 4 = AQ^2$$

$$41 + 4 = AQ^2$$

$$AQ^2 = 45$$

$$AQ = \sqrt{45} \approx 6,7 \text{ cm}$$

- 11** a  $\angle B = 90^\circ$ , dus  $AB^2 + BC^2 = AC^2$

$$36^2 + 48^2 = AC^2$$

$$1296 + 2304 = AC^2$$

$$AC^2 = 3600$$

$$AC = \sqrt{3600} = 60 \text{ cm}$$

- b  $\angle S = 90^\circ$ , dus  $AS^2 + TS^2 = AT^2$

$$30^2 + TS^2 = 43,5^2$$

$$900 + TS^2 = 1892,25$$

$$\boxed{-900}$$

$$\boxed{-900}$$

$$TS^2 = 992,25$$

$$TS = \sqrt{992,25} \approx 31,5 \text{ cm}$$