Der Lehrsatz des Pythagoras

1a) $a^2 + b^2 = c^2$
$12^2 + 9^2 = 15^2$
$144 + 81 = 225$
$225 = 225$
➔ JA

1b) $a^2 + b^2 = c^2$
$12^2 + 12^2 = 18^2$
$144 + 144 = 324$
$288 = 324$
→ NEIN

1c) $a^2 + b^2 = c^2$
$36^2 + 15^2 = 39^2$
$1296 + 225 = 1521$
$1521 = 1521$
→ JA

2a) $c = \sqrt{a^2 + b^2}$
$c = \sqrt{12^2 + 5^2}$
$c = \sqrt{144 + 25}$
$c = \sqrt{169}$
$c = 13\ cm$

2b) $b = \sqrt{c^2 - a^2}$
$b = \sqrt{7{,}3^2 - 4{,}8^2}$
$b = \sqrt{53{,}29 - 23{,}04}$
$b = \sqrt{30{,}25}$
$b = 5{,}5\ cm$

2c) $a = \sqrt{c^2 - b^2}$
$a = \sqrt{1{,}3^2 - 1{,}2^2}$
$a = \sqrt{1{,}69 - 1{,}44}$
$a = \sqrt{0{,}25}$
$a = 0{,}5\ cm$

3a) $z = \sqrt{x^2 + y^2}$
$z = \sqrt{3{,}2^2 + 3{,}5^2}$
$z = \sqrt{10{,}24 + 12{,}25}$
$z = \sqrt{22{,}49}$
$z = 4{,}7\ cm$

2b) $x = \sqrt{z^2 - y^2}$
$x = \sqrt{5{,}7^2 - 3{,}8^2}$
$x = \sqrt{32{,}49 - 14{,}44}$
$x = \sqrt{18{,}05}$
$x = 4{,}2\ cm$

2c) $y = \sqrt{z^2 - x^2}$
$y = \sqrt{4{,}7^2 - 2{,}3^2}$
$y = \sqrt{22{,}09 - 5{,}29}$
$y = \sqrt{16{,}8}$
$y = 4{,}1\ cm$

4) $d = \sqrt{s^2 + s^2}$
$d = \sqrt{8{,}3^2 + 8{,}3^2}$
$d = \sqrt{68{,}89 + 68{,}89}$
$d = \sqrt{137{,}78}$
$d = 11{,}7\ cm$

5) $d = \sqrt{l^2 + b^2}$
$d = \sqrt{15{,}2^2 + 12{,}1^2}$
$d = \sqrt{231{,}04 + 146{,}41}$
$d = \sqrt{377{,}45}$
$d = 19{,}4\ cm$

6) $d^2 = s^2 + s^2$
$d^2 = 2s^2 \quad / : 2$
$\frac{d^2}{2} = s^2 \quad / \sqrt{\ }$
$\sqrt{\frac{d^2}{2}} = s$
$s = \sqrt{\frac{d^2}{2}} = \sqrt{\frac{120^2}{2}} = \sqrt{7200} = 84{,}9\ cm$

7) $l = \sqrt{d^2 - b^2}$
$l = \sqrt{9{,}7^2 - 6{,}5^2}$
$l = \sqrt{94{,}09 - 42{,}25}$
$l = \sqrt{51{,}84}$
$l = 7{,}2\ cm$

8a) $d = \sqrt{264^2 + 110^2}$
$d = \sqrt{69\,696 + 12\,100}$
$d = \sqrt{81\,796}$
$d = 286\ m$

8) 1 m ..... 1 s
286 m ..... 286 s
286 : 60 = 4 min 46 s

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