VOR 2021 **STÆF2RH05 - fjarnám**

Verkefni 8

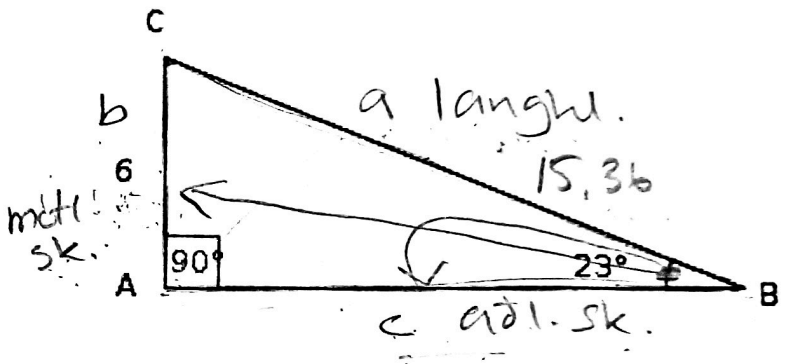
Nafn:_____

Athugið að þríhyrningarnir eru ekki endilega teiknaðir í réttum hlutföllum.

1. Reiknaðu út lengdina á hlið a og hlið c. Hornið B er 23°.

Hlið a = 15,36

Hlið c = 14,14



$\sin(B°) = \frac{\text{mótl. sk.}}{\text{langhl.}}$

$a \cdot \sin(23°) = \frac{6 \cdot a}{a}$

$\frac{a \cdot \sin(23°)}{\sin(23°)} = \frac{6}{\sin(23°)}$

$a = 15,36$

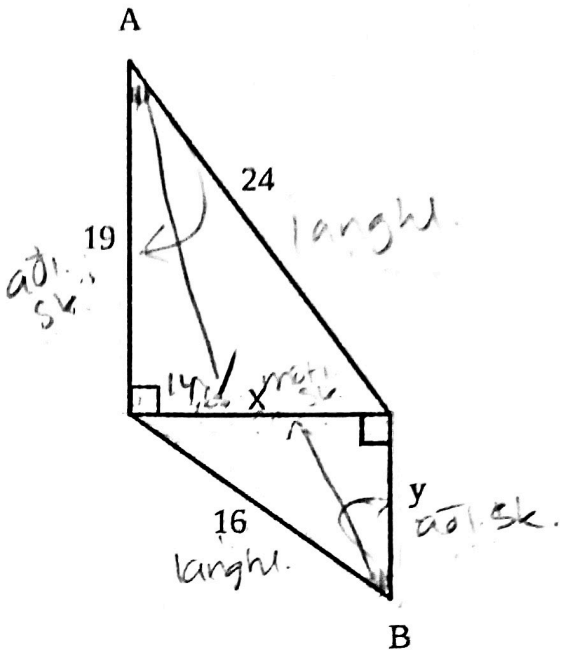
$\tan(B°) = \frac{\text{mótl. sk.}}{\text{aðl. sk.}}$

$c \cdot \tan(23°) = \frac{6 \cdot c}{c}$

$\frac{c \cdot \tan(23°)}{\tan(23°)} = \frac{6}{\tan(23°)}$

$c = 14,14$

2. Reiknaðu



Hornið A: 37,66°

Hliðina x: 14,66

Hliðina y: 6,41

Hornið B: 66,38°

$A^\circ = \cos^{-1}\left(\frac{\text{aðl. sk.}}{\text{langhl.}}\right)$

$A^\circ = \cos^{-1}\left(\frac{19}{24}\right)$

$A^\circ = 37{,}66^\circ$

$\text{Tan}(A^\circ) = \frac{\text{mótl. sk.}}{\text{aðl. sk.}}$

$19 \cdot \text{Tan}(37{,}66^\circ) = \frac{x}{19} \cdot 19$

$x = 14{,}66$

$B^\circ = \sin^{-1}\left(\frac{\text{mótl. sk.}}{\text{langhl.}}\right)$

$B^\circ = \sin^{-1}\left(\frac{14{,}66}{16}\right)$

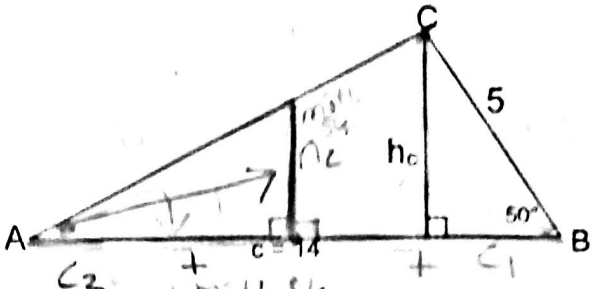
$B^\circ = 66{,}38^\circ$

$\cos(B^\circ) = \frac{\text{aðl. sk.}}{\text{langhl.}}$

$16 \cdot \cos(66{,}38^\circ) = \frac{y}{16} \cdot 16$

$y = 6{,}41$

3. Þríhyrningurinn ABC er **ekki rétthyrndur**. Hornið B = 50°, hliðin a = 5 og hliðin c = 14. **Reiknaðu:**



hliðina h_c = 3,83

hornið A = 19,54°

hliðina b = 11,45

hliðina n_c = 2,484

$\sin(B°) = \frac{\text{mótl. sk.}}{\text{langhl.}}$

$5 \cdot \sin(50°) = \frac{h_c \cdot 5}{5}$

$h_c = 3,83$

$\cos(B°) = \frac{\text{aðl. sk.}}{\text{langhl.}}$

$5 \cdot \cos(50°) = \frac{c_1 \cdot 5}{5}$

$c_1 = 3,21$

$c_2 = 14 - 3,21$

$c_2 = 10,79$

$A° = \tan^{-1}\left(\frac{\text{mótl. sk.}}{\text{aðl. sk.}}\right)$

$A° = \tan^{-1}\left(\frac{3,83}{10,79}\right)$

$A° = 19,54°$

$\cos(A°) = \frac{\text{aðl. sk.}}{\text{langhl.}}$

$b \cdot \cos(19,54°) = \frac{10,79 \cdot b}{b}$

$\frac{b \cdot \cos(19,54°)}{\cos(19,54°)} = \frac{10,79}{\cos(19,54°)}$

$b = 11,45$

$\text{Tan}(A°) = \frac{\text{mótl sk}}{\text{aðl. sk.}}$

$7 \cdot \text{Tan}(19,54°) = \frac{n_c \cdot 7}{7}$

$n_c = 2,484$