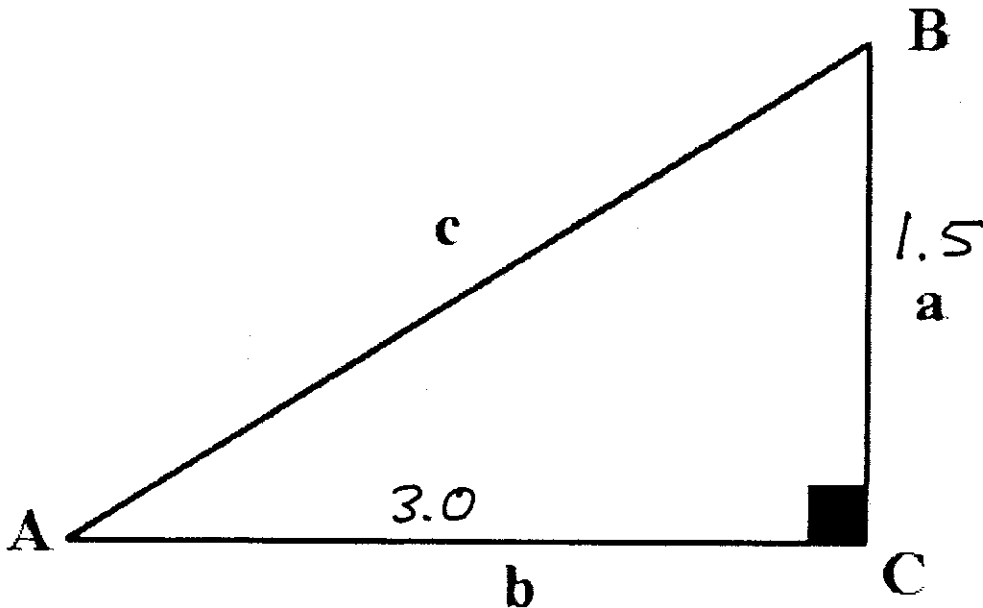


Solve this right triangle: $a = 1.5$ feet and $b = 3.0$ feet



ANSWERS

$a = 1.5$ (given)

$A = 26^{\circ}34'$

$b = 3.0$ (given)

$B = 63^{\circ}26'$

$c = \sqrt{11.25}$ or $1.5\sqrt{5}$
or 3.354

$C = 90^{\circ}$ (given)

Step 1: Use Pythagorean Theorem to solve for side c.

$$\begin{aligned}
 c^2 &= a^2 + b^2 & c^2 &= 11.25 & c &= 1.5\sqrt{5} & & 2.236 \\
 c^2 &= (1.5)^2 + (3)^2 & c &= \sqrt{11.25} & c &= 1.5(2.236) & & +1.118 \\
 c^2 &= 2.25 + 9 & c &= \sqrt{2.25(5)} & c &= 3.354 & & \hline
 & & & & & & & 3.354
 \end{aligned}$$

Step 2: Determine the Tangent of angle A as a decimal.

$\tan A = \frac{\text{oppo} \angle A}{\text{ADJ} \angle A} = \frac{1.5}{3.0} = \frac{1}{2} = 0.5$
(From Definition)

Note: Use the tangent since OPPOSITE AND ADJACENT SIDES WERE GIVEN.

Step 3: Determine from the trig tables the angle A:

$A = \tan^{-1}(0.5) = 26^{\circ}34'$
(From Trig table)

Step 4: Use $A+B+C=180^{\circ}$ to determine angle B

$B = 180^{\circ} - C - A$ $B = 90^{\circ} - 26^{\circ}34'$ $B = 63^{\circ}26'$
 $B = 180^{\circ} - 90^{\circ} - 26^{\circ}34'$ $B = 89^{\circ}60' - 26^{\circ}34'$