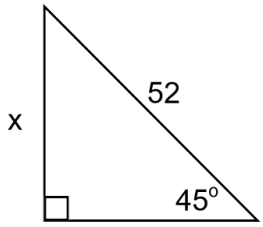
MPM 2D (Practice)
Mr. Kempe

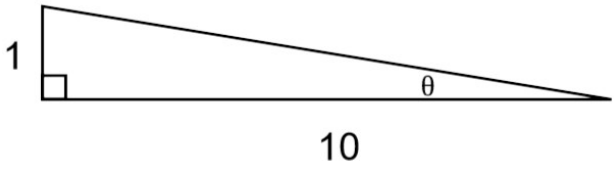
Name: _____
Date: _____

Quiz #4B – Trigonometry

[15 marks]

1. Solve for the indicated value in each triangle.

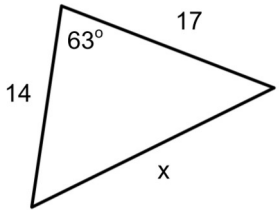


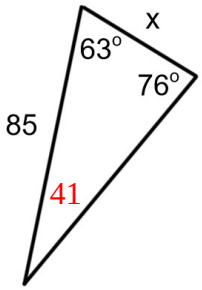


$$\sin\theta = \frac{opp}{hyp}$$
$$\sin 45 = \frac{x}{52}$$
$$0.7071 = \frac{x}{52}$$
$$36.77 = x$$

$$\tan\theta = \frac{opp}{adj}$$
$$\tan\theta = \frac{1}{10}$$
$$\theta = \tan^{-1} 0.1$$
$$\theta = 5.7$$

2. Solve for the indicated value in each triangle.





$$c^2 = a^2 + b^2 - 2ab\cos C$$
$$x^2 = 14^2 + 17^2 - 2(14)(17)\cos 63$$
$$x^2 = 196 + 289 - 476(0.4540)$$
$$x^2 = 485 - 216.101$$
$$x^2 = 268.896$$
$$x = 16.4$$

$$180 - 63 - 76 = 41$$

$$\frac{x}{\sin 41} = \frac{85}{\sin 76}$$
$$\frac{x}{0.6561} = \frac{85}{0.9703}$$
$$x = 57.5$$

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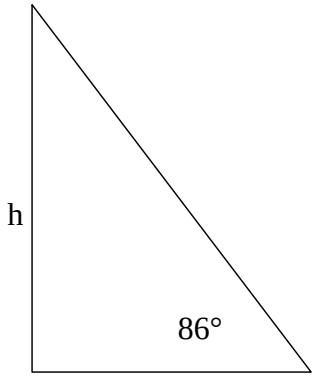
3. A hiker is standing 25m from the base of a cliff, and estimates that the angle of elevation to the top of the cliff is 86°. Determine the height of the cliff.

$$\tan 86 = \frac{h}{25}$$
$$14.3007 = \frac{h}{25}$$
$$357.5 \approx h$$



The cliff is 357.5m high.