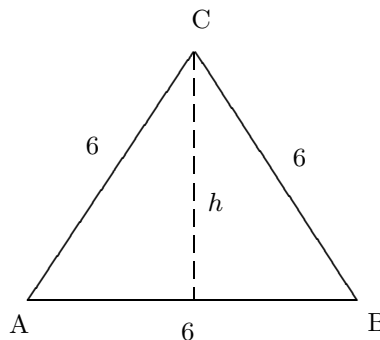


MAA SAMPLE MATHEMATICS TEST
TRIGONOMETRY AND ELEMENTARY FUNCTIONS

The items on this sample test are similar to the items on the Trigonometry and Elementary Functions Test in level of difficulty. However, not all of the topics or types of items that are on the Trigonometry and Elementary Functions Test are included here.

1. Find the exact value of $\sin\left(\frac{3\pi}{4}\right)$.

2. In the figure to the right, ABC is an equilateral triangle.
Find the height h of the triangle.



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3. If $\frac{\pi}{2} < \theta < \frac{3\pi}{4}$, determine whether $\tan \theta$ is less than -1 or greater than -1 .
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4. Express $\cos(2x)$ in terms of $\sin x$ and/or $\cos x$.
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5. If $f(x) = 10^{\left(\frac{1+x}{1-x}\right)}$, then find $f(3)$.
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6. Values of the functions f and g are given in the table below. Find the value of $g(f(3))$.

x	$f(x)$	$g(x)$
1	5	3
2	1	5
3	4	2
4	2	1
5	3	4

7. Find an equation for the straight line which passes through the points $(3, 2)$ and $(5, -2)$.