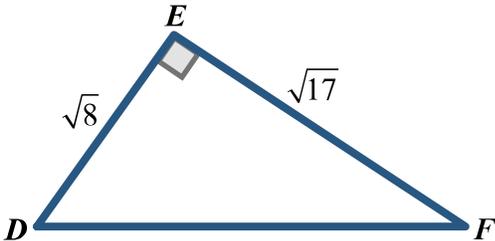# USING TRIG RATIOS (SAMPLE RESPONSES)

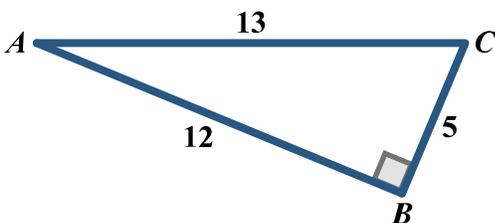**1)** In $\triangle DEF$ shown below, $\overline{DE} = \sqrt{8}\,cm$ and $\overline{EF} = \sqrt{17}\,cm$. What is $\cos(F)$?

E

$\sqrt{8}$ $\sqrt{17}$

D   F

$$\overline{DF} = \sqrt{\left(\sqrt{8}\right)^2 + \left(\sqrt{17}\right)^2} = 5$$

$$\boxed{\cos(F) = \frac{\sqrt{17}}{5}}$$

2) The lengths of 3 sides of a right triangle $\triangle ABC$, which is shown below, are all given in feet.

A   13   C

12   5

B

Which ratio has the value of $\frac{12}{13}$?

(a) $sin(A)$

(b) $sin(C)$

(c) $cos(B)$

(d) $cos(C)$

(e) $tan(A)$

(f) $tan(C)$

3) For an angle with measure θ in a right triangle, $\sin\theta = \frac{\sqrt{15}}{8}$ and $\cos\theta = \frac{7}{8}$. What is the value of $\tan\theta$?
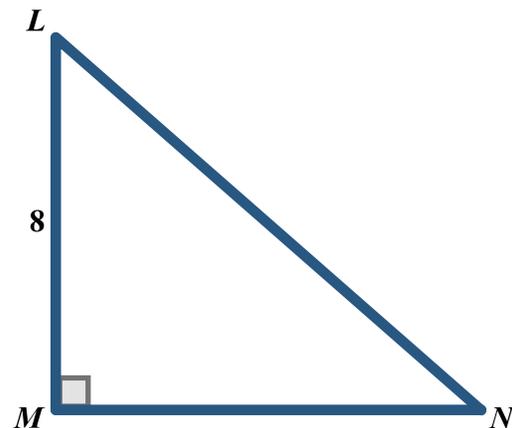
sketch a triangle

opposite $= \sqrt{15}$

adjacent $= 7$

hypotenuse $= 8$

$$\boxed{\tan\theta = \frac{\sqrt{15}}{7}}$$

4) In $\triangle LMN$ shown below, the length of $\overline{LM}$ is 8 inches and $\sin(N) = \frac{2}{3}$. What is the length, in inches, of $\overline{LN}$?

L

8

M   N

$$\sin(N) = \frac{2}{3} = \frac{8}{LN}$$

$$\Rightarrow \boxed{\overline{LN} = 12}$$