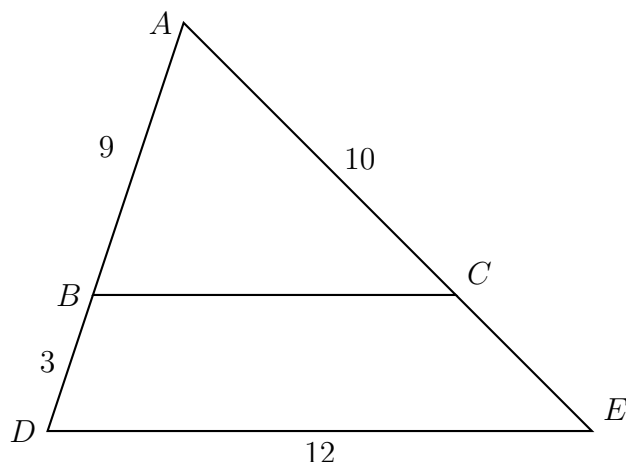


11.14 Triangle dilation

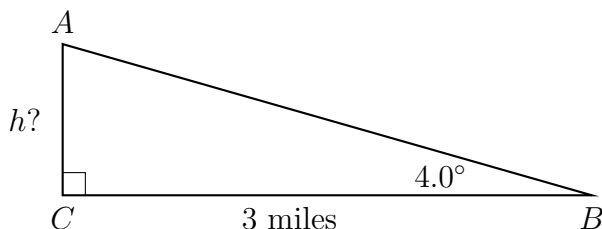
1. Triangle ABC is dilated with a scale factor of k centered at A , yielding $\triangle ADE$, as shown. Given $AB = 9$, $BD = 3$, $AC = 10$, and $DE = 12$. Find BC .



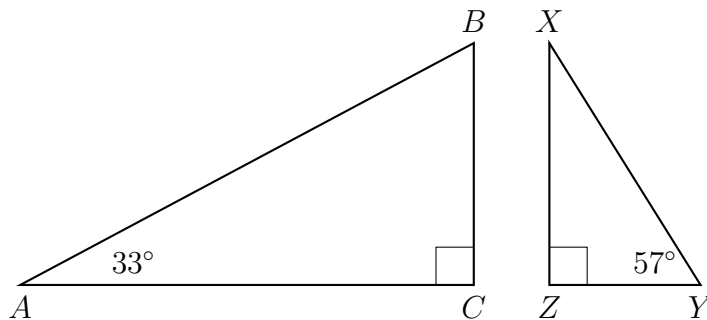
2. What is an equation of the line that passes through the point $(5, -2)$ and is perpendicular to a line with equation $y = \frac{3}{4}x + 5$?
- (a) $y - 2 = \frac{4}{3}(x + 5)$ (c) $y + 2 = \frac{4}{3}(x - 5)$
(b) $y - 2 = -\frac{4}{3}(x + 5)$ (d) $y + 2 = -\frac{4}{3}(x - 5)$
3. A beach tent can be modeled as a pyramid with a square base whose sides measure 72 inches and whose height measures 96 inches. What is the volume of the tent, to the *nearest cubic foot*?
4. The equation of a circle is $x^2 + y^2 - 12x - 2y = 27$. What are the center and radius of the circle?
5. Point M divides \overline{AB} so that $AM : MB = 1 : 4$. If A has coordinates $(1, -1)$ and B has coordinates $(6, 9)$, what are the coordinates of M ?

6. From three miles away, the angle of elevation to the top of a radio tower is 4.0° . What is the height of the tower, to the *nearest ten feet*? (1 mile = 5280 feet)

not to scale



7. If a circular disk is continuously rotated around its diameter, what is the three-dimensional figure formed?
- (a) cone (c) cylinder
(b) sphere (d) rectangular prism
8. Given right triangle ABC with a right angle at C , $m\angle A = 33^\circ$. Given right triangle XYZ with a right angle at Z , $m\angle Y = 57^\circ$.



Which proportion in relation to $\triangle ABC$ and $\triangle XYZ$ is *not* correct?

- (a) $\frac{AC}{AB} = \frac{XZ}{XY}$ (c) $\frac{AC}{XZ} = \frac{BC}{YZ}$
(b) $\frac{BC}{AC} = \frac{YZ}{XZ}$ (d) $\frac{BC}{XZ} = \frac{AB}{XY}$