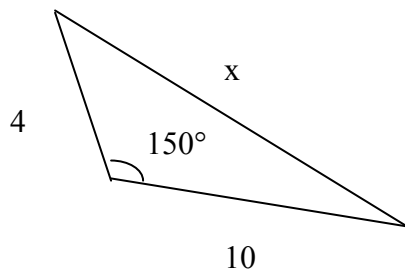


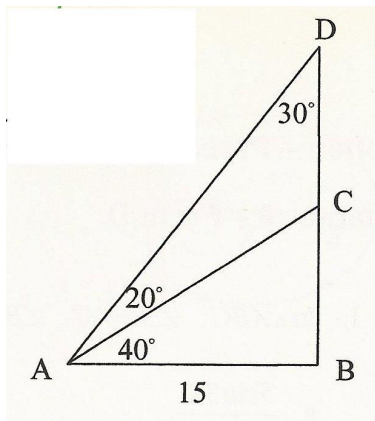
Practice Test Chapter 9
Math 144

1. In $\triangle ABC$, $\angle A = 40^\circ$, $\angle B = 35^\circ$, and $AC = 5$ cm. Find the length of side AB in cm.

2. Determine x in the triangle shown.

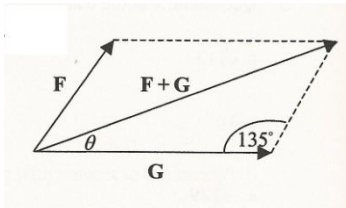


3. Determine CD in the figure shown to the right. Angle ABC is a right angle.



4. Two points P and Q have coordinates $P(1, 3)$ and $Q(3, 6)$. Find the magnitude of \mathbf{PQ} .

5. Two forces **F** and **G** act on an object as shown. $F = 8\text{ N}$ and $G = 20\text{ N}$. Find the magnitude of $F + G$.



7. Referring to the figure in #5, find the angle θ (in degrees) between the forces **G** and $F + G$.

8. The coordinates of two points P and Q are given by P (-2, -4) and Q (3, -1). Determine the angle θ (in degrees) between the vector **PQ** and the *positive* x-axis.

9. If $\mathbf{a} = [2 + 6]$ and $\mathbf{b} = [-1 + 4]$, find the vector $2\mathbf{a} - 3\mathbf{b}$.

10. The angle between a vector \mathbf{v} and the positive x-axis is $5\pi / 6$. The magnitude of \mathbf{v} is 5. Determine the components of \mathbf{v} .

11. Find a vector \mathbf{u} having a length of 1 and the same directions as $\mathbf{v} = [-4 \ +3]$.

12. If $\mathbf{a} = [2 \ +3]$ and $\mathbf{b} = [-2 \ +5]$ compute $|\mathbf{b}| \mathbf{a} + |\mathbf{a}| \mathbf{b}$

13. Express the vector $2[1 \ -2] + 3[4 \ -1]$ in terms of the unit vectors \mathbf{i} and \mathbf{j} .

14. A curve is given parametrically by the equations $x = 1 + t^2$ and $y = 2 - t^3$. Determine the coordinates of the point on the curve when $t = 2$.

15. A curve is given parametrically by the equations $x = 2 - 3t$ and $y = 2 + 3t^2$. If $P(x, y)$ is a point on the curve with $x = 1$, determine y .

17. The position of a point $P(x, y)$ at time t is given by the parametric equations $x = 2 \sin t$ and $y = 3 \cos t$. Find the x - y equation for the path traced out by the point P .