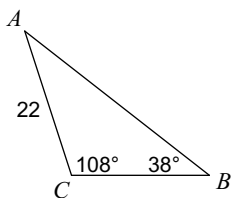


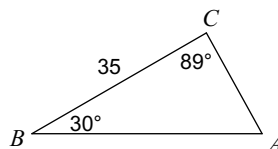
Law of Sines, Law of Cosines, Vectors, All Skills

Solve each triangle. Round your answers to the nearest tenth.

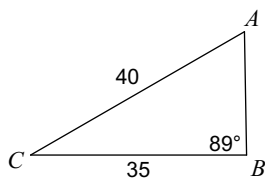
1)



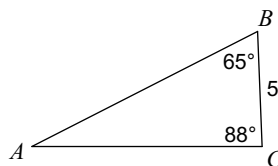
2)



3)



4)



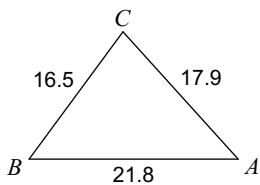
5)  $m\angle A = 16^\circ, m\angle B = 101^\circ, a = 9$

6)  $m\angle A = 61^\circ, m\angle B = 89^\circ, c = 4$

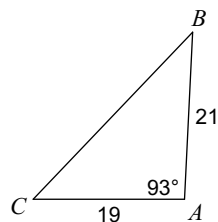
7)  $m\angle C = 133^\circ, m\angle A = 12^\circ, c = 14$

8)  $m\angle B = 39^\circ, a = 35, b = 6$

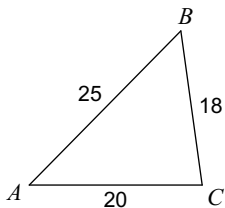
9)



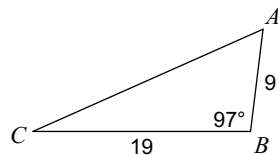
10)



11)



12)



13)  $b = 10, c = 11, a = 17$

14)  $b = 14.3, a = 12.6, c = 21.1$

15)  $b = 14, c = 25, m\angle A = 126^\circ$

16)  $b = 7, c = 17, m\angle A = 103^\circ$

**Find the component form of the resultant vector.**

17)  $\mathbf{u} = \langle 8, 5 \rangle$   
 $\mathbf{v} = \langle 5, 1 \rangle$   
Find:  $-\mathbf{u} - \mathbf{v}$

18)  $\mathbf{u} = \langle -3, -10 \rangle$   
 $\mathbf{b} = \langle 12, 3 \rangle$   
Find:  $-\mathbf{u} - \mathbf{b}$

19)  $\mathbf{f} = \langle 12, -7 \rangle$   
 $\mathbf{v} = \langle -9, 4 \rangle$   
Find:  $\mathbf{f} + \mathbf{v}$

20)  $\mathbf{u} = \langle -8, -8 \rangle$   
 $\mathbf{v} = \langle 12, 6 \rangle$   
Find:  $-\mathbf{u} - \mathbf{v}$

**Find the magnitude and direction angle for each vector.**

21)  $\mathbf{m} = \langle 33, 11 \rangle$

22)  $\mathbf{k} = \langle -32, -22 \rangle$

23)  $\mathbf{a} = \langle 7, -24 \rangle$

24)  $\mathbf{r} = \langle -1, 50 \rangle$

**Write each vector in component form.**

25)  $|\mathbf{p}| = 72, 39^\circ$

26)  $|\mathbf{k}| = 53, 97^\circ$

27)  $|\mathbf{b}| = 57, 156^\circ$

28)  $|\mathbf{p}| = 45, 279^\circ$

**Find the magnitude and direction angle of the resultant vector.**

29)  $|\mathbf{f}| = 3, 283^\circ$   $|\mathbf{g}| = 19, 330^\circ$   
Find:  $\mathbf{f} + \mathbf{g}$

30)  $|\mathbf{u}| = 18, 324^\circ$   $|\mathbf{g}| = 6, 120^\circ$   
Find:  $\mathbf{u} + \mathbf{g}$

31)  $|\mathbf{f}| = 7, 101^\circ$   $|\mathbf{b}| = 7, 139^\circ$   
Find:  $-\mathbf{f} + \mathbf{b}$

32)  $|\mathbf{f}| = 22, 120^\circ$   $|\mathbf{g}| = 18, 315^\circ$   
Find:  $\mathbf{f} + \mathbf{g}$

## Answers to Law of Sines, Law of Cosines, Vectors, All Skills (ID: 1)

- |  |   |   |
|--|---|---|
| 1) $m\angle A = 34^\circ, c = 34, a = 20$                                    | 2) $m\angle A = 61^\circ, b = 20, c = 40$                                     | 3) $m\angle C = 30^\circ, m\angle A = 61^\circ, c = 20$ |
| 4) $m\angle A = 27^\circ, b = 10, c = 11$                                    | 5) $m\angle C = 63^\circ, b = 32.1, c = 29.1$                                 | 6) $m\angle C = 30^\circ, b = 8, a = 7$                 |
| 7) $m\angle B = 35^\circ, b = 11, a = 4$                                     | 8) Not a triangle   |   |
| 9) $m\angle B = 53.6^\circ, m\angle C = 78.5^\circ, m\angle A = 47.9^\circ$  | 10) $m\angle B = 40.7^\circ, m\angle C = 46.3^\circ, a = 29$                  |   |
| 11) $m\angle C = 82.1^\circ, m\angle A = 45.5^\circ, m\angle B = 52.4^\circ$ | 12) $m\angle C = 24^\circ, m\angle A = 59^\circ, b = 22$                      |   |
| 13) $m\angle B = 34^\circ, m\angle C = 38^\circ, m\angle A = 108^\circ$      | 14) $m\angle B = 41.3^\circ, m\angle C = 103.1^\circ, m\angle A = 35.6^\circ$ |   |
| 15) $m\angle B = 18.8^\circ, m\angle C = 35.2^\circ, a = 35.1$               | 16) $m\angle B = 20.2^\circ, m\angle C = 56.8^\circ, a = 19.8$                |   |
| 17) $\langle -13, -6 \rangle$  | 18) $\langle -9, 7 \rangle$   | 19) $\langle 3, -3 \rangle$                             |
| 21) $11\sqrt{10} \approx 34.785$   | 22) $2\sqrt{377} \approx 38.833$  | 23) 25  |
| 18.43°   | 214.51°   | 286.26°   |
| 25) $\langle 55.95, 45.31 \rangle$   | 26) $\langle -6.46, 52.6 \rangle$   | 27) $\langle -52.07, 23.18 \rangle$                     |
| 29) 21.16; 324.05°   | 30) 12.75; 335.03°  | 31) 4.56; 210°  |
|  |   | 20) $\langle -4, 2 \rangle$                             |
|  |   | 24) $\sqrt{2501} \approx 50.01$                         |
|  |   | 91.15°  |
|  |   | 28) $\langle 7.04, -44.45 \rangle$                      |
|  |   | 32) 6.56; 74.72°  |