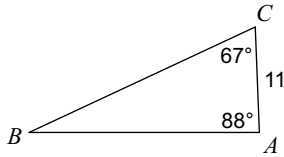


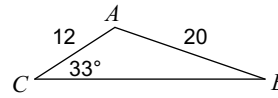
Test - Chapter 6

Find each measurement indicated. Round your answers to the nearest tenth.

1) Find BC



2) Find $m\angle B$

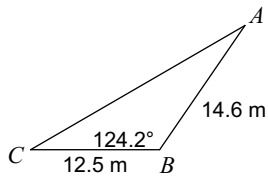


State the number of possible triangles that can be formed using the given measurements.

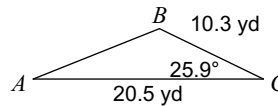
3) $m\angle B = 91^\circ$, $a = 9$ km, $b = 23$ km

Find each measurement indicated. Round your answers to the nearest tenth.

4) Find AC

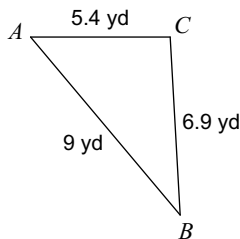


5) Find $m\angle A$



Find the area of each triangle to the nearest tenth.

6)



Find the component form and exact magnitude for the vector.

7) \overrightarrow{RS} where $R = (-2, -1)$ $S = (-7, 8)$

Write each vector in component form.

8) $|\vec{m}| = 94, 135^\circ$

9) $|\vec{b}| = 86, 198^\circ$

Find the direction angle for each vector.

10) \overrightarrow{RS} where $R = (-4, 1)$ $S = (3, -3)$

Draw a vector diagram for $\vec{a} + \vec{b}$ and write the result in component form.

11) $\vec{t} = \langle 11, 13 \rangle$ $\vec{u} = \langle -19, 9 \rangle$

Draw a diagram to illustrate the horizontal and vertical components of the vector.

12) $|\vec{a}| = 41, 24^\circ$

Find the magnitude of the horizontal and vertical components of the vector. Round to 2 decimal places.

13) $|\vec{a}| = 39, 293^\circ$

Find the component form of the resultant vector.

14) $\vec{u} = \langle -5, -6 \rangle$
 $\vec{b} = \langle 3, -12 \rangle$
Find: $\vec{u} + \vec{b}$

15) $\vec{f} = \langle 1, 8 \rangle$
Find: $\sqrt{2} \cdot \vec{f}$

Express the resultant vector as a linear combination of unit vectors \mathbf{i} and \mathbf{j} .

16) Given: $A = (4, 9)$ $B = (-10, 3)$
 $C = (-4, -3)$ $D = (-4, -2)$
Find: $-2\vec{AB} - 7\vec{CD}$

17) Given: $T = (5, 0)$ $X = (4, -9)$
 $Y = (-3, -4)$ $Z = (3, -6)$
Find: $-5\vec{TX} - 10\vec{YZ}$

Find the dot product of the given vectors.

18) $\vec{u} = \langle -3, -3 \rangle$
 $\vec{v} = \langle 1, 8 \rangle$

19) $\vec{u} = \langle 4, 8 \rangle$
 $\vec{v} = \langle -5, -4 \rangle$

Find the measure of the angle between the two vectors.

20) $\vec{u} = \langle 4, -8 \rangle$
 $\vec{v} = \langle -8, -5 \rangle$

Find the projection of \mathbf{u} onto \mathbf{v} .

21) $\vec{u} = \langle -3, 3 \rangle$
 $\vec{v} = \langle 2, -4 \rangle$

Write each in trig. form.

22) $-\frac{\sqrt{30}}{2} + \frac{\sqrt{10}}{2}i$

Write each in standard form.

23) $3(\cos 225 + i\sin 225)$

Simplify. Write your answer in trig. form.

24) $6(\cos 90 + i\sin 90) \cdot 2(\cos 240 + i\sin 240)$

Find all n th roots. Write your answers in trig. form.

25) $2(\cos 60 + i\sin 60), n = 3$

Answers to Test - Chapter 6 (ID: 1)

- 1) 26 2) 19.1° 3) One triangle 4) 24 m
- 5) 21.8° 6) 18.6 yd^2 7) $\langle -5, 9 \rangle$ 8) $\langle -47\sqrt{2}, 47\sqrt{2} \rangle$
- 9) $\langle -81.79, -26.58 \rangle$ 10) 330.26° 11) $\sqrt{106} \approx 10.296$
- 11) $\langle \sqrt{2}, 8\sqrt{2} \rangle$

12)
- 13) Horizontal: 15.24 14) $\langle -2, -18 \rangle$ 15) $\langle \sqrt{2}, 8\sqrt{2} \rangle$ 16) $28\vec{i} + 5\vec{j}$
- Vertical: -35.9
- 17) $-55\vec{i} + 65\vec{j}$ 18) -27 19) -52 20) 84.56°
- 21) $\left\langle -\frac{9}{5}, \frac{18}{5} \right\rangle$ 22) $\sqrt{10} \left(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6} \right)$ 23) $-\frac{3\sqrt{2}}{2} - \frac{3\sqrt{2}}{2}i$
- 24) $12(\cos 330 + i \sin 330)$ 25) $\sqrt[3]{2}(\cos 20 + i \sin 20)$
 $\sqrt[3]{2}(\cos 140 + i \sin 140)$
 $\sqrt[3]{2}(\cos 260 + i \sin 260)$