

Due never

1 pt If $V_x = 19.70$ units and $V_y = -15.60$ units, determine the magnitude of $\mathbf{V}$.

1. A ☐ 18.89 B ☐ 25.13 C ☐ 33.42 D ☐ 44.45
E ☐ 59.12

1 pt Determine the angle of $\mathbf{V}$ with respect to the x-axis. (in deg)

2. A ☐ -23.96 B ☐ -28.03 C ☐ -32.80 D ☐ -38.37
E ☐ -44.90

1 pt

A vector $\vec{\mathbf{A}}$ has a magnitude of 48.9 m and points in a direction 19.6° below the x axis. A second vector, $\vec{\mathbf{B}}$, has a magnitude of 73.6 m and points in a direction 50.8° above the x axis. If vector $\vec{\mathbf{C}} = \vec{\mathbf{A}} + \vec{\mathbf{B}}$, calculate the magnitude of the vector $\vec{\mathbf{C}}$. (in m)

3. A ☐ 1.01×10^2 B ☐ 1.34×10^2 C ☐ 1.79×10^2
D ☐ 2.38×10^2 E ☐ 3.16×10^2

1 pt What is the direction of vector $\vec{\mathbf{C}}$? (in deg)

4. A ☐ 7.77 B ☐ 1.13×10^1 C ☐ 1.63×10^1
D ☐ 2.37×10^1 E ☐ 3.44×10^1

1 pt Which item/s in the following list is/are a vector quantity?

▷ Time

5. A ☐ True B ☐ False

▷ Force

6. A ☐ True B ☐ False

▷ Length

7. A ☐ True B ☐ False

▷ Speed

8. A ☐ True B ☐ False

▷ Volume

9. A ☐ True B ☐ False

1 pt

A vector is 20.1 m long and makes an angle of 58.6° counter-clockwise from the y -axis (on the side of the $-x$ -axis). What is the x -component of this vector? (in m)

10. A ☐ -1.25×10^1 B ☐ -1.47×10^1 C ☐ -1.72×10^1
D ☐ -2.01×10^1 E ☐ -2.35×10^1

1 pt What is the y -component of this vector? (in m)

11. A ☐ 4.29 B ☐ 5.36 C ☐ 6.70
D ☐ 8.38 E ☐ 1.05×10^1

1 pt Identify the statements as being either True or False.

▷ A dimensionally correct equation may be wrong.

12. A ☐ True B ☐ False

▷ A dimensionally incorrect equation must be wrong.

13. A ☐ True B ☐ False

▷ A dimensionally correct equation must be correct.

14. A ☐ True B ☐ False

▷ A dimensionally correct equation may be correct.

15. A ☐ True B ☐ False

▷ A dimensionally incorrect equation may be correct.

16. A ☐ True B ☐ False

1 pt X and Y are dimensionally different. (They have different units.) Select ALL the physically meaningful operations

▷ $X^{1/3}$ or $Y^{1/3}$

17. ☐ True ☐ False

▷ $X+Y$ or $X-Y$

18. ☐ True ☐ False

▷ $e^{X/Y}$ or e^{X+Y}

19. ☐ True ☐ False

▷ X^2 or Y^2

20. ☐ True ☐ False

▷ X/Y or $X*Y$

21. ☐ True ☐ False

▷ $X^2 + Y^2$ or $X^X + Y^Y$

22. ☐ True ☐ False

1 pt

How many seconds are there in 1.5 hours?

23. ☐ 1221.5795 ☐ 1771.2903 ☐ 2568.3710
☐ 3724.1379 ☐ 5400

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1 pt The volume of an object is 1150 m³. Express this volume in cm³.

24. ☐ 1.15×10^9 ☐ 1.44×10^9 ☐ 1.80×10^9
☐ 2.25×10^9 ☐ 2.81×10^9

1 pt Express the above volume in ft³.

25. ☐ 1.72×10^4 ☐ 2.29×10^4 ☐ 3.05×10^4
☐ 4.06×10^4 ☐ 5.40×10^4

1 pt Express the above volume in in.³.

26. ☐ 2.87×10^7 ☐ 3.59×10^7 ☐ 4.49×10^7
☐ 5.61×10^7 ☐ 7.02×10^7

1 pt Two perpendicular sides of a triangle are 5.93 m and 7.35 m long, respectively. Find the length of the third side of the triangle.

(in m)

27. ☐ 5.04 ☐ 5.90 ☐ 6.90 ☐ 8.07
☐ 9.44

1 pt

Find the smallest angle of the triangle in the previous problem.

(in deg)

28. ☐ 3.32×10^1 ☐ 3.89×10^1 ☐ 4.55×10^1
☐ 5.32×10^1 ☐ 6.23×10^1

1 pt In cleaning out the artery of a patient, a doctor increases the radius of the opening by a factor of 2.60. By what factor does the cross-sectional area of the artery change?

29. ☐ 2.16 ☐ 2.87 ☐ 3.82 ☐ 5.08
☐ 6.76