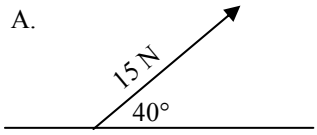
A-Day: Due Wed., Oct 3 (Assigned: 10/1)
B-Day: Due Thurs., Oct 4 (Assigned: 10/2)

Two Dimensions 3

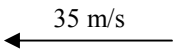
Make sure you wrote these on your equation chart: $V_x = V\cos\theta$ AND $V_y = V\sin\theta$ if θ from + x axis.

1. Resolve the following vectors into their x and y components.

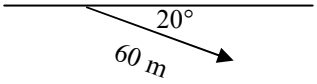
A.



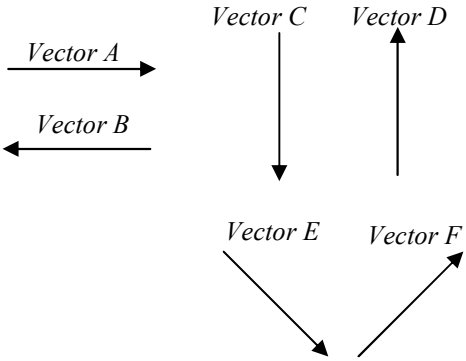
B.



C.



2. What is the magnitude of vector C above?
3. What is the direction of vector A above?

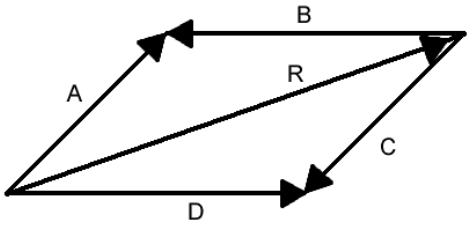


4. For all vectors we must r_____ them into their x and y components.

Use the vectors at the right to answer the following.

5. A + D + C + B + E =

6. Graphically find the following (draw these):
   A) E – F + 2D B) 2A—2D + E

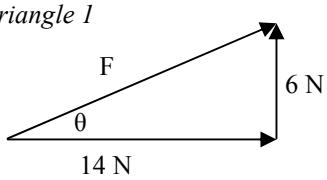


On the parallelogram at the right, R is the resultant. R starts at the bottom left and ends at the top right. (Hint: remember that vectors can be added in any order.)

7. Give three combinations of vectors that would correctly produce R.

8. On triangle 1:
   A) What is Fx?
   B) What is Fy?
   C) Find F's magnitude.

Triangle 1



9. On triangle 1, find F's direction (θ). (*Use trig*)

10. A person walks 15 m west, 10 m north, 25 m east, 6 m south, then another 8 m north.
    A) Find the total x-displacement.

    B) Find the total y-displacement.

    C) Using the x and y-components above, draw the resultant at the right.

    D) Find the resultant's magnitude and direction.

More on back

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11. If an object is going 4 m/s for 10 seconds….
    A) How far did the object move?

    B) If the object was moving at 30° (from the x-axis), how fast was it moving in the x direction? (*Find the x-component of the object's velocity.)*

    C) In the 10 seconds it moved, how far did it move in the x-direction?

From the last two bellwork notes:

12. A person laying in the sun has what kind of heat transfer?

13. Our ocean has currents which transfer heat by _____.

14. When a piece of ice is sitting in your hand, the heat moves
    A) From your hand to the ice OR
    B) From the ice to your hand?

15. In the previous ice question, what kind of heat transfer is occurring?

16. Draw an arrow on the diagram to show the direction of heat transfer between the pairs of objects.

15° C	40° C

40° C	40° C

75° C	40° C

From yesterday's bellwork notes:

17. How compact an object is is know as _____.

18. Which is more dense: paper or iron?

19. Do heavy things sink?

    Explain.

20. If ice is put into water does it sink or float?
21. Is this the rule or an exception?

22. If solid aluminum is dropped into liquid aluminum, does the solid aluminum sink or float?

23. A 14 g object takes up 8 mL of space. Find it's density.

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