

Drawing Two Angled Vectors

Make each diagram large enough that the direction and angle relationships are clear.

For each problem:

- Draw each pair of vectors accurately, head-to-tail, using a ruler and protractor.
- Label each vector with its given direction and angle.
- Determine and label all useful angles between the two vectors.

A. Same Quadrant

- Travel 10 cm, 30° east of north, then 8.0 cm, 20° east of north.
- Travel 12 cm, 25° south of east, then 7.0 cm, 40° south of east.
- Travel 10 cm, 30° east of north, then 8.0 cm, 40° north of east.
- Travel 9.0 cm, 25° south of west, then 7.0 cm, 35° west of south.

B. Adjacent Quadrants — Same Reference Direction

- Travel 12 cm, 30° north of east, then 5.0 cm, 20° south of east.
- Travel 12 cm, 25° east of north, then 5.0 cm, 20° west of north.
- Travel 8.0 cm, 20° north of east, then 12 cm, 30° south of east.
- Travel 8.0 cm, 20° east of north, then 12 cm, 30° west of north.

C. Adjacent Quadrants — Changing Reference Direction

- Travel 12 cm, 30° north of east, then 5.0 cm, 20° east of south.
- Travel 12 cm, 25° east of north, then 3.0 cm, 20° north of west.
- Travel 10 cm, 30° north of east, then 10 cm, 60° east of south.
- Travel 8.0 cm, 20° east of north, then 10 cm, 30° north of west.

D. Opposite Quadrants — Clear Dominance

- Travel 14 cm, 30° north of east, then 5.0 cm, 20° south of west.
- Travel 6.0 cm, 20° north of east, then 14 cm, 40° south of west.

E. Opposite Quadrants — Mixed Dominance

15. Travel 12 cm, 20° north of east, then 8.0 cm, 40° south of west.
16. Travel 12 cm, 20° south of east, then 8.0 cm, 40° north of west.

F. Challenge — Near Cancellation

17. Travel 10 cm, 35° north of east, then 10 cm, 40° west of south.
18. Travel 10 cm, 35° south of east, then 10 cm, 45° west of north.