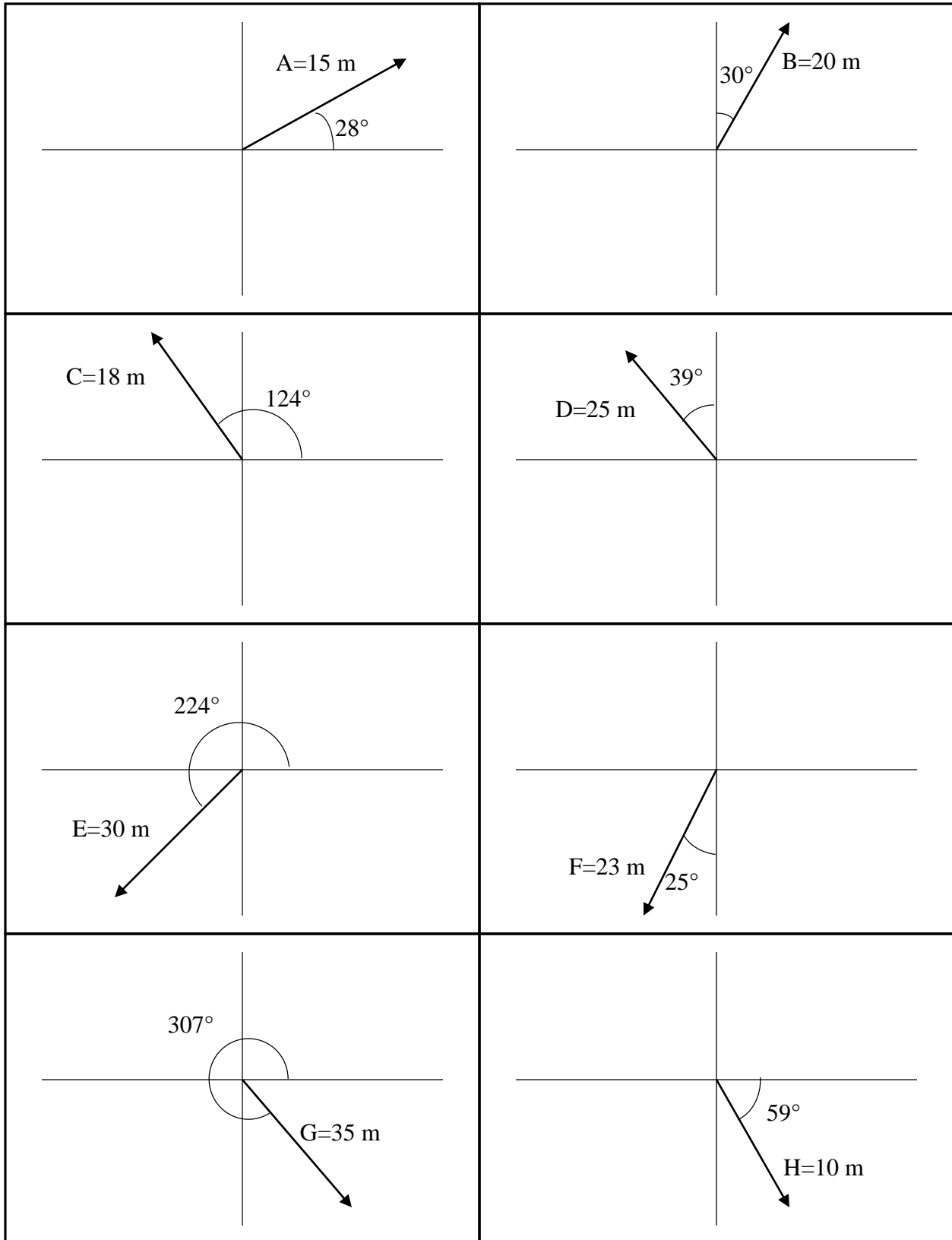


# Vector Components and Vector Addition Worksheet



Find the components of the vectors. Find the sum of any two vectors. Answers on the back.

## Vector Components and Vector Addition Worksheet

**Answers:**

|   | <i>x</i> component (m) | <i>y</i> component (m) |
|---|------------------------|------------------------|
| A | 13.2                   | 7.0                    |
| B | 10                     | 17.3                   |
| C | -10.1                  | 14.9                   |
| D | -15.7                  | 19.4                   |
| E | -21.6                  | -20.8                  |
| F | -9.7                   | -20.8                  |
| G | 21.1                   | -28.0                  |
| H | 5.2                    | -8.6                   |

### Vector Addition Practice:

To find the sum of two vectors, find the first vector in the row and the second vector in the column and go to the entry in the table. The first entry in the table is the magnitude of the sum and the second entry is the direction of the sum. The direction is measured counterclockwise from the  $+x$ -axis.

| +        | <b>A</b> |      | <b>B</b> |      | <b>C</b> |      | <b>D</b> |      |
|----------|----------|------|----------|------|----------|------|----------|------|
| <b>A</b> | 30.0 m   | 28°  | 33.7 m   | 46°  | 22.2 m   | 82°  | 26.6 m   | 95°  |
| <b>B</b> | 33.7 m   | 46°  | 40.0 m   | 60°  | 32.2 m   | 90°  | 37.2 m   | 99°  |
| <b>C</b> | 22.2 m   | 82°  | 32.2 m   | 90°  | 36.0 m   | 124° | 43.0 m   | 127° |
| <b>D</b> | 26.6 m   | 95°  | 37.2 m   | 99°  | 43.0 m   | 127° | 50.0 m   | 129° |
| <b>E</b> | 16.1 m   | 239° | 12.1 m   | 197° | 32.2 m   | 191° | 37.3 m   | 182° |
| <b>F</b> | 14.2 m   | 284° | 3.5 m    | 275° | 20.7 m   | 197° | 25.5 m   | 183° |
| <b>G</b> | 40.2 m   | 329° | 32.8 m   | 341° | 17.1 m   | 310° | 10.1 m   | 302° |
| <b>H</b> | 18.5 m   | 355° | 17.5 m   | 30°  | 8.0 m    | 128° | 15.2 m   | 134° |

| +        | <b>E</b> |      | <b>F</b> |      | <b>G</b> |      | <b>H</b> |      |
|----------|----------|------|----------|------|----------|------|----------|------|
| <b>A</b> | 16.1 m   | 239° | 14.2 m   | 284° | 40.2 m   | 329° | 18.5 m   | 355° |
| <b>B</b> | 12.1 m   | 197° | 3.5 m    | 275° | 32.8 m   | 341° | 17.5 m   | 30°  |
| <b>C</b> | 32.2 m   | 191° | 20.7 m   | 197° | 17.1 m   | 310° | 8.0 m    | 128° |
| <b>D</b> | 37.3 m   | 182° | 25.5 m   | 183° | 10.1 m   | 302° | 15.2 m   | 134° |
| <b>E</b> | 60.0 m   | 224° | 52.1 m   | 233° | 48.8 m   | 269° | 33.7 m   | 241° |
| <b>F</b> | 52.1 m   | 233° | 46.0 m   | 245° | 50.1 m   | 283° | 29.8 m   | 261° |
| <b>G</b> | 48.8 m   | 269° | 50.1 m   | 283° | 70.0 m   | 307° | 45.0 m   | 306° |
| <b>H</b> | 33.7 m   | 241° | 29.8 m   | 261° | 45.0 m   | 306° | 20.0 m   | 301° |