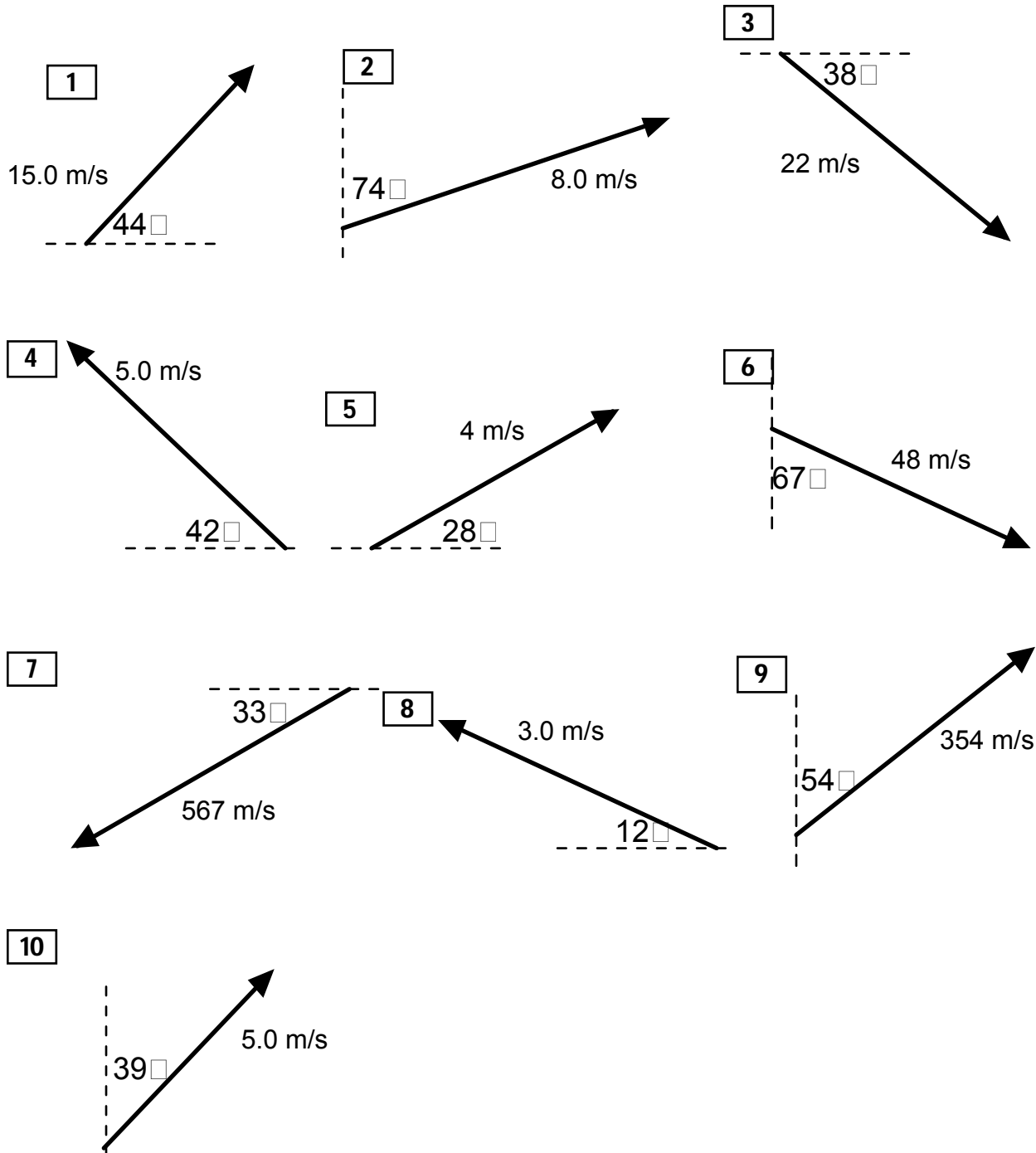


Launch Angle Components

For each problem below you are given the initial velocity for a projectile. Label the vertical and horizontal components in the same manner that we did in class. Use the angle that is given. Do not use its complementary or supplementary angle.



11. A baseball is thrown from center field to second base. It is released 42 m/s at an angle of 35° with the ground. In the space above, draw the initial velocity's triangle with its components.
12. A package of food supplies is air dropped into Africa in such a way that it is ejected at 16 m/s downwards at an angle of 62° with the vertical. In the space above draw the initial velocity's triangle with its components.

Listed in the order v_x and v_y

1. 10.8 m/s, 10.4 m/s; 2. 7.7 m/s, 2.2 m/s; 3. 17.3 m/s, -13.5 m/s; 4. -3.7 m/s, 3.3 m/s; 5. 3.53 m/s, 1.88 m/s; 6. 44.2 m/s, -18.7 m/s; 7. -475 m/s, -309 m/s; 8. -2.93 m/s, 0.624 m/s; 9. 286.4 m/s, 208 m/s; 10. 3.15 m/s 3.89 m/s; 11. 4 m/s 24.1 m/s; 12. 14m/s, -7.5 m/s

Find the vertical and horizontal components for each of the velocities given below.

1. A rock is thrown with a speed of 46.5 m/s at an angle of 38° with the ground.
2. A Volvo lands after driving off a cliff at an angle of 68° with the ground. It impacted the ground at 32 m/s.
3. An alien space-egg is catapulted from the planet Ork at an angle of 75° with the ground and a speed of 459 m/s.
4. A meteor hits the Earth with a speed of 86 m/s at an angle of 21° with the ground.
5. A girl jumps off a swing and lands at 7 m/s and at an angle of 39° with the ground.
6. A jet lands on an aircraft carrier with a horizontal speed of 109 m/s and a downward vertical speed of 9.0 m/s. What is the VELOCITY (Magnitude and Direction) of the jet?

Listed in the order v_x and v_y

Answers: 1. 36.6 m/s, 28.6 m/s; 2. 12 m/s -29.7 m/s; 3. 119 m/s, 443 m/s; 4. 80.4 m/s, -30.8 m/s; 5. 5.44 m/s, -4.41 m/s; 6. 109.4 m/s -4.72°