|  |  |
| --- | --- |
|  | **Physics 20 - Lesson 11****Vector Addition-Components**Possible 90/90 |
| y=25cos40y=19.2m/s25m/sx=25sin40x=16.1m/sb)y=16sin20y=5.5m/s216m/s2x=16cos20x=15.0m/s2c)y=45sin25y=11.6km45km1)/9 | a)x=45cos25x=43.5km |
| 2) /16 | a) distanceb) displacement     c) speed   |

|  |  |
| --- | --- |
| 3)/16 | a) distance b) displacement 7.17165.23  c) speed  |
| 4)/14 |    a) b)      29.02895.66  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5)/14 | 500m600m400m300m71.0

|  |  |  |
| --- | --- | --- |
|  | vertical | horizontal |
| A | 438.8 | 409.2 |
| B | 394.0 | -307.8 |
| C | -145.0 | -262.4 |
| D | -389.7 | 90.0 |
|  | 297.7 | -71.0 |

297.7 |
| 6)/12 | a)300Ay = 638.9800m

|  |  |  |
| --- | --- | --- |
|  | vertical | horizontal |
| A | 638.9 | 481.5 |
| B | 0 | -300 |
| C | -240.7 | 319.5 |
|  | 398.2 | 501 |

b) timec)crow398.2501 |

|  |  |
| --- | --- |
| 7)/9 | The motion of the shadow is the horizontal component of motion for the airplane.vh = 200 km/hvv v a)15ov = **207 km/h**t = **1.1 min**b) |