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|  | **Physics 20 - Lesson 11**  **Vector Addition-Components**  Possible 90/90 |
| y=25cos40  y=19.2m/s    25m/s  x=25sin40  x=16.1m/s  b)  y=16sin20  y=5.5m/s2    16m/s2  x=16cos20  x=15.0m/s2  c)  y=45sin25  y=11.6km  45km    1)  /9 | a)  x=45cos25  x=43.5km |
| 2)      /16 | a) distance      b) displacement                          c) speed |

|  |  |
| --- | --- |
| 3)  /16 | a) distance  b) displacement                                7.17  165.23            c) speed |
| 4)  /14 | a)  b)                          29.02  895.66 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5)  /14 | 500m    600m                        400m  300m    71.0   |  |  |  | | --- | --- | --- | |  | 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)          300    Ay = 638.9  800m       |  |  |  | | --- | --- | --- | |  | vertical | horizontal | | A | 638.9 | 481.5 | | B | 0 | -300 | | C | -240.7 | 319.5 | |  | 398.2 | 501 |   b) time    c)crow    398.2    501 |

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