

## Answers to WIR 1 Review Problems

1.  $\langle 2, 4 \rangle$
2.  $\langle 7, 6 \rangle$
3. a.)  $\sqrt{5}$   
b.)  $\left\langle \frac{-2}{\sqrt{13}}, \frac{3}{\sqrt{13}} \right\rangle$   
c.)  $\langle 7, 0 \rangle$   
d.)  $t = \frac{-2}{7}, s = \frac{24}{7}$
4.  $F = \langle 4, 2\sqrt{3} \rangle, |F| \approx 5.2915 \text{ lbs}, \theta \approx 41^\circ$
5. True Course  $\approx N72^\circ E$ ; Ground speed  $\approx 246.04$  km/hr.
6. a.) 13  
b.)  $\frac{15}{2}$
7.  $\theta = 45^\circ$
8.  $\sqrt{3} - 2$
9.  $\left\langle -1/\sqrt{26}, 5/\sqrt{26} \right\rangle$
10. vector projection:  $\langle 12/5, 4/5 \rangle$ ; scalar projection:  $8/\sqrt{10}$
11.  $\frac{8}{\sqrt{5}}$
12. 100 foot pounds
13. 26 units of work