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1. A motorcycle accelerates from rest to $15 \mathrm{~m} / \mathrm{s}[\mathrm{E}]$ in 2.5 s . What is the motorcycle's acceleration?
2. A car traveling forward at $22 \mathrm{~m} / \mathrm{s}$ stops in a time of 2.0 s . What is the car's acceleration?
3. A bicycle speeds up from $3.0 \mathrm{~m} / \mathrm{s}[\mathrm{N}]$ to $12 \mathrm{~m} / \mathrm{s}[\mathrm{N}]$ in 4.0 s . What is the bicycle's acceleration?
4. A train traveling West at $18 \mathrm{~m} / \mathrm{s}$ slows to a velocity of $6.0 \mathrm{~m} / \mathrm{s}$ West in a time of 24 s . What is the train's acceleration?
5. A sprinter, starting from rest, accelerates at $2.0 \mathrm{~m} / \mathrm{s}^{2}$ forward. What is the sprinter's velocity after 1.5 s ?
6. By applying its brakes, a car can decelerate at $3.0 \mathrm{~m} / \mathrm{s}^{2}$. If it takes this car 6.0 s to stop, how fast was it originally moving?
7. What is the final velocity of a boat traveling $3.0 \mathrm{~m} / \mathrm{s}[\mathrm{E}]$ if it accelerates at $1.2 \mathrm{~m} / \mathrm{s}^{2}[\mathrm{E}]$ for 5.0 s ?
8. What is the final velocity of a boat traveling $11.0 \mathrm{~m} / \mathrm{s}[\mathrm{E}]$ if it accelerates at $1.2 \mathrm{~m} / \mathrm{s}^{2}[\mathrm{~W}]$ for 5.0 s ?
9. How long would it take to stop an airplane, landing at $45 \mathrm{~m} / \mathrm{s}[\mathrm{N}]$ if it decelerates at $5.0 \mathrm{~m} / \mathrm{s}^{2}[\mathrm{~S}]$ ?
10. How long would it take a race-car to accelerate from $12 \mathrm{~m} / \mathrm{s}$ to $25 \mathrm{~m} / \mathrm{s}$ if its forward acceleration is $2.0 \mathrm{~m} / \mathrm{s}^{2}$ ?
