

76. We note that $mg = (15)(9.8) = 147$ N.

- (a) The penguin's weight is $W = 147$ N.
- (b) The normal force exerted upward on the penguin by the scale is equal to the gravitational pull W on the penguin because the penguin is not accelerating. So, by Newton's second law, $N = W = 147$ N.
- (c) The reading on the scale, by Newton's third law, is the reaction force to that found in part (b). Its magnitude is therefore the same: 147 N.