

Homework Solutions

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Exercise 24

- (a) The answer is given by $\text{normalcdf}(454, 474, 464, 8) = 0.7887$, or 78.87%.
- (b) This is like part (c) of Exercise 22. We need to find the 90th percentile. The answer is given by $\text{invNorm}(.90, 464, 8) = 474.25$.
- (c) Halving the standard deviation has the effect of contracting the axis of the variable by a factor of 2, centered at the mean. In other words, measuring out from the mean, half the distance would give the same area as earlier. The previous answer was 10.25 above the mean, so the equivalent answer now would be half that, or 5.125, above the mean. So the new answer would be $464 + 5.125 = 469.125$.