Lesson 7: Probability Calculations Involving a Mean Response

Preparation

## Solutions

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| Problem | Part | Solution |
| 1 | 1 | The parent population is normally distributed, so the sample mean is automatically normally distributed. |
| 1 | 2 | The sample size is large, and the Central Limit Theorem implies that the sample mean is normally distributed. |
| 2 | - | z = (value - mean)/standard deviation. |
| 3 | A | About 68% using the 68, 95, 99.7 rule or 0.6827 ‘exact’ |
| 3 | B | 40percentile = 8.7333 |
| 3 | C |  |
| 3 | D | so probability = 0.3446 |
| 3 | E |  |
| 4 | - | Normal |
| 5 | - | Normal |
| 6 | - | About 16% using the 68, 95, 99.7 rule or 0.1587 ‘exact’ |
| 7 | - | About 95% using the 68, 95, 99.7 rule or 0.9545 ‘exact’ |
| 8 | - | About 95% using the 68, 95, 99.7 rule or 0.9545 ‘exact’ |
| 9 | - |  |
| 10 | - | Right Skewed |
| 11 | - | Approximately Normal |
| 12 | - | Central Limit Theorem |
| 13 | - | No, the distribution is not normal, and the normal probability applet is only for normal distribution. |
| 14 | - |  |
| 15 | - |  |