Practice quiz: ASQ Certified Quality Inspector (CQI)

10 questions. The answer key is on page 2.

Name _____ Date _____

1. **A diameter has USL = 5.030 mm and LSL = 4.970 mm. The process standard deviation is 0.008 mm. What is Cp?**
   A. 1.25
   B. 2.50
   C. 0.63
   D. 3.75

2. **The same diameter (USL = 5.030 mm, LSL = 4.970 mm, sigma = 0.008 mm) now runs at a mean of 5.012 mm. What is Cpk?**
   A. 0.75
   B. 1.75
   C. 1.25
   D. 0.38

3. **Subgroups of 5 give R-bar = 0.0186 mm, and d2 = 2.326 for n = 5. The specification width (USL - LSL) is 0.060 mm. Estimating sigma as R-bar / d2, what is Cp?**
   A. 0.54
   B. 0.23
   C. 1.25
   D. 2.50

4. **Runout has only an upper limit of 0.50 mm. The process mean is 0.20 mm and sigma is 0.05 mm. What is the capability index for the upper side (Cpk)?**
   A. 1.00
   B. 3.33
   C. 6.00
   D. 2.00

5. **A process has Cp = 1.25 and Cpk = 0.75. The spread stays the same, and the mean is moved to the exact middle of the specification. What will Cpk become?**
   A. 0.75, because the spread has not changed
   B. 1.75, the value of the better side before
   C. 1.50, twice the off-center value of 0.75
   D. 1.25, the same as Cp

6. **A stable process has Cp = 1.60 and Cpk = 0.90. The customer requires Cpk of at least 1.33. What should be done first?**
   A. Reduce the spread, because the process varies too much
   B. Nothing, because Cp is already above 1.33
   C. Move the process mean toward the middle of the specification
   D. Ask the customer to widen the specification

7. **Which pair of indices uses the overall standard deviation of all the data, rather than a within-subgroup estimate such as R-bar / d2?**
   A. Both Cp and Cpk
   B. Pp and Ppk
   C. The X-bar chart control limits
   D. The R chart center line

8. **A specification is 0.12 mm wide (USL - LSL). The customer wants Cp of at least 2.00. What is the largest process standard deviation that meets it?**
   A. 0.010 mm
   B. 0.020 mm
   C. 0.005 mm
   D. 0.060 mm

9. **A specification is 10.00 plus or minus 0.10. The process has Cp = 1.50, and its mean is 10.02. What is Cpk?**
   A. 1.80
   B. 1.20
   C. 1.48
   D. 1.30

10. **A stable process has USL = 10.09, LSL = 9.95, mean = 10.03 and sigma = 0.02. The area beyond z = 3.00 is 0.00135 and beyond z = 4.00 is 0.00003. About how many parts per million fall above the USL?**
    A. About 30 ppm
    B. About 1,350 ppm
    C. About 1.35 ppm
    D. About 135 ppm

Original practice questions, never real or recalled exam questions. Not affiliated with or endorsed by ASQ. Exam names are used descriptively. Free 10-question check:
https://gaugeblockprep.com/asq-cqi?utm_source=print&utm_medium=pdf&utm_campaign=asq-cqi_content_202611&utm_content=quiz-pdf

Answer key

ASQ Certified Quality Inspector (CQI). One line of why for each answer.

1. **A** Cp = (5.030 - 4.970) / (6 x 0.008) = 0.060 / 0.048 = 1.25.
2. **A** Upper side: (5.030 - 5.012) / (3 x 0.008) = 0.018 / 0.024 = 0.75.
3. **C** sigma = 0.0186 / 2.326 = 0.0080 mm.
4. **D** With one limit, Cpk is the upper side alone: (0.50 - 0.20) / (3 x 0.05) = 0.30 / 0.15 = 2.00.
5. **D** When the mean is centered both sides are equal, and Cpk equals Cp, here 1.25.
6. **C** Cp of 1.60 shows the spread fits the specification; the low Cpk shows the mean is off center.
7. **B** Pp and Ppk use the overall sample standard deviation of all the data.
8. **A** Cp = width / (6 sigma), so sigma = width / (6 x Cp) = 0.12 / (6 x 2.00) = 0.12 / 12 = 0.010 mm.
9. **B** sigma = 0.20 / (6 x 1.50) = 0.02222.
10. **B** z for the USL = (10.09 - 10.03) / 0.02 = 3.00, and the area beyond is 0.00135, or 0.00135 x 1,000,000 = 1,350 ppm.

Full explanations

Every question here has its full explanation in the free sample lesson. No signup.
gaugeblockprep.com/asq-cqi/sample

Take the free 10-question check

Original practice questions, never real or recalled exam questions. Not affiliated with or endorsed by ASQ. Exam names are used descriptively. Free 10-question check:
https://gaugeblockprep.com/asq-cqi?utm_source=print&utm_medium=pdf&utm_campaign=asq-cqi_content_202611&utm_content=quiz-pdf