

Questions on 8.3 HW? Quiz Thursday...can you fill out a normal distribution curve and answer questions about the percent under the curve? No z-scores on quiz...

SM3H - Module 8 SE.pdf - Adobe Acrobat Reader DC

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Home Tools SM3H - Module 8 ... Ztable.pdf

21 / 44 125%

Set

z-score: $\frac{\text{data point} - \text{mean}}{\text{standard deviation}}$

A company makes a mean monthly income of \$20,300 with a standard deviation of \$3,200. In one given month the company makes \$29,500.

4. Find the z-score. $Z = \frac{29500 - 20300}{3200} = 2.875 = 2.88$

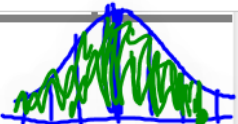
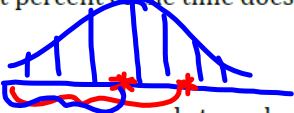
5. Assuming the company's monthly income is Normal, what percent of the time does the company make more than this amount? Less than? $\rightarrow 99.8\%$
 $100 - 99.8 = 0.2\%$

6. What percent of the time does the company make between \$15,000 and \$25,000?

7. If the company needs to make \$16,400 in order to break even, how likely in a given month is the company to make a profit?

On the Wechsler Adult Intelligence Scale, an average IQ is 100 with a standard deviation of 15 units. (Source: http://en.wikipedia.org/wiki/Intelligence_quotient)

8. IQ scores between 90 and 109 are considered average. Assuming IQ scores follow a Normal

14. $g(x) = -2(x-3)^2(x+5)(2x-5)^3$

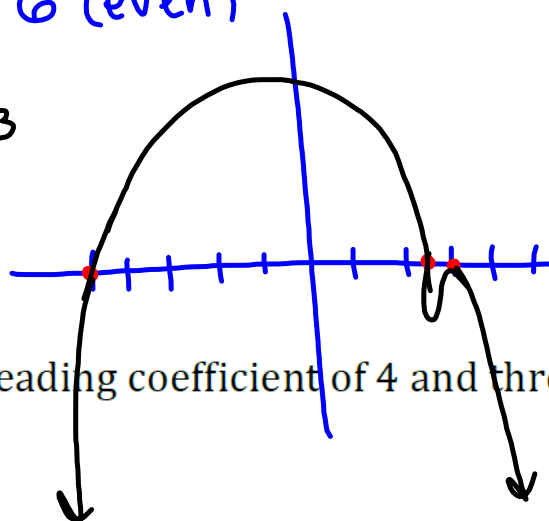
leading coefficient: -2 (negative)

degree: $2+1+3 = 6$ (even)

Roots: $3, -5, 5/2$

$m:2 \quad m:1 \quad m:3$

m = multiplicity



15. A cubic function with a leading coefficient of 4 and three p

SAGE REVIEW PACKET:

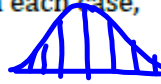
-Work on #1-15 today

8.4 Whoa! That's Weird!

A Practice Understanding Task

Each of the stories below are based upon normal distributions. Rank order these stories from most unusual to most average. (1 is the most unusual, 6 is the most average.) In each case, explain your ranking.

z-score



- A. The number of red loops in a box of Tutti-Frutti-O's is normally distributed with mean of 800 loops and standard deviation 120. Tony bought a new box, opened it, and counted 1243 red loops. (It didn't really matter because all the colors are the same flavor anyway.)

Rank 3 Explanation: z-score: 3.69

- B. The weight of house cats is normally distributed with a mean of 10 pounds and standard deviation 2.1 pounds. My cat, Big Boy, weighs 6 pounds.

Rank 4 Explanation: $z = -1.90$

- C. The lifetime of a battery is normally distributed with a mean life of 40 hours and a standard deviation of 1.2 hours. I just bought a battery and it died after just 20 hours

Rank 1 Explanation: $z = -16.67$

- D. The amount that a human fingernail grows in a year is normally distributed with a mean growth of 3.5 cm and a standard deviation of 0.63 cm. My neighbor's thumbnail grew all year without breaking and it is 4.6 cm long with stars and stripes painted on it.

Rank 5 Explanation: $z = 1.75$

- E. My little brother was digging in the garden and found a giant earthworm that was 35 cm long. The length of earthworms is normally distributed with a mean length of 14 cm and a standard deviation of 5.3 cm.

Rank 2 Explanation: $z = 3.96$

- F. The mean length of a human pregnancy is 268 days with a standard deviation of 16 days. My aunt just had a premature baby delivered after only 245 days.

Rank 6 Explanation: $z = -1.44$

Homework

Finish 8.4 "Ready, Set, Go"