Test
Wed April 3
5.2-5.4, 6.1-6.4, 8.1-8.3

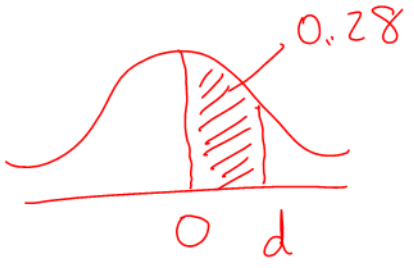
Quiz
Tues April 9
9.2-9.4

9.2-9.4 Normal Distribution Cont'd

Ex: A data set is normally distributed with a mean of 0 and a standard deviation of 1.

a), b), c) wed last week

d) Find d so that $P(0<z<d)=0.28$



Online Calculator: Value From Area

area = 0.56

$\mu = 0$

$\sigma = 1$

Select "between"

-0.772 to 0.772

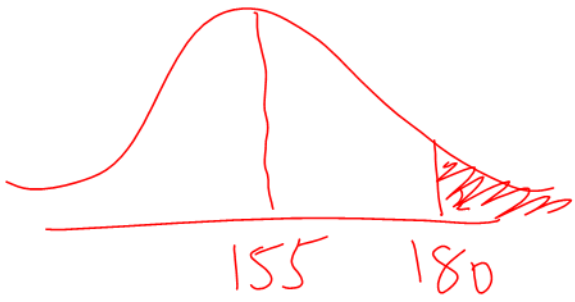
$d = 0.772$

Ex: The time it takes a student to write a Math 191 exam is normally distributed with a mean of 2 hours 35 mins and a standard deviation of 10 mins.

a) Find the probability that a random student is still writing after 3 hours.

$\mu = 155$ mins

$\sigma = 10$



0.0062

or 0.62%

b) In a class of 500 students, how many would still be

writing after 3 hours?

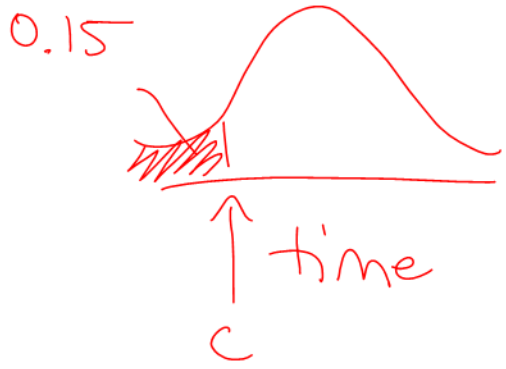
$$P(\text{still writing}) = \frac{n(\text{still writing})}{500}$$

$$0.0062 = \frac{n(\text{still writing})}{500}$$

$$500\,(0.0062) = n(\text{still writing})$$

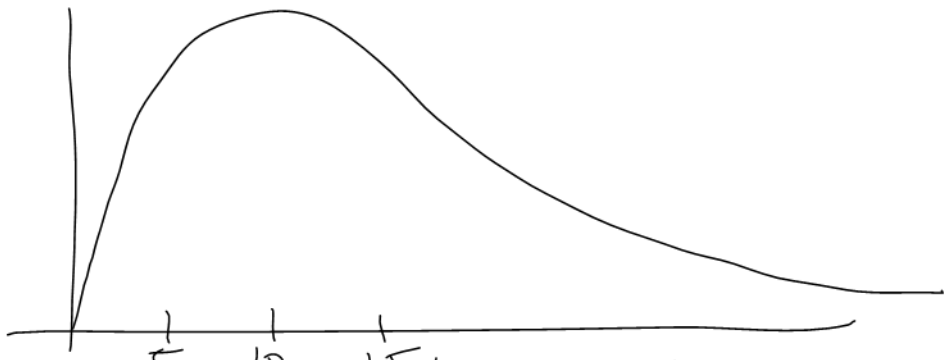
$$3 \approx n(\text{still writing})$$

c) The fastest 15% of students will complete the exam in c minutes. Find c.



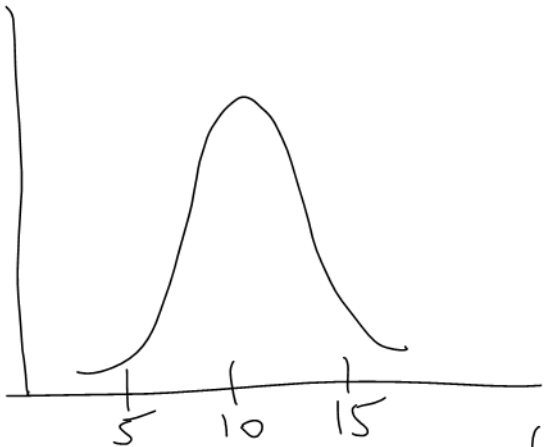
$c = 144.636$ minutes

9.5 The Central Limit Theorem



x = age of a nickel (years)

Take a random sample of 30 nickels and calculate the average age.



$\bar{x}$ = average age of 30 nickels (years)

- mound-shaped
- same centre as population
- way less spread out than population