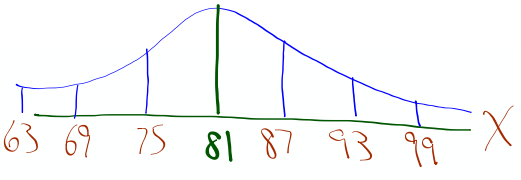
Pick up the Warm Up

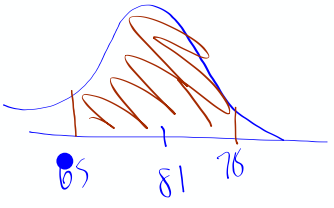
You'll want to look at you reference sheets for Notation

Chapter 1 test scores from Mrs. Gallas's first-hour class follow an approximately Normal distribution with a mean of 81 and standard deviation of 6.

a) Sketch the Normal curve that approximates the distribution of Chapter 1 test scores. Label appropriately.



Ch.1 Test Scores



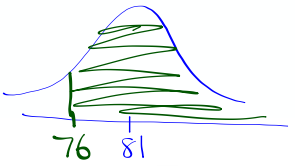
b) $P(65 < x < 78)$

$= .3085$

$\approx 30.5\%$

normal cdf(65, 78, 81, 6)

c) What percent of the scores are ~~between~~ are greater than 76?



$P(x > 76) = 79.8\%$ $\mu = 81$ $\sigma = 6$

$= \text{normalcdf}(76, 1000, 81, 6)$

d) If there are 50 students in the class, approximately how many students have a score within one standard deviation of the mean ?

$P(75 < x < 87) = .686\ldots$

$(.688\ldots) \cdot 50 = 34.1$ students

There are many small isolated topics that are in the IB Math Curriculum. Those will be handled during warm ups.

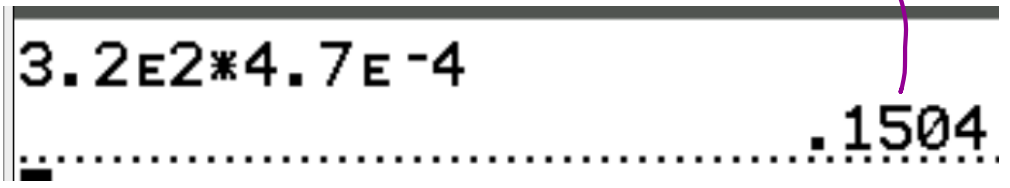
III. STANDARD INDEX FORM (Scientific Notation)

If $a = 3.2 \times 10^{2}$ and $b = 4.7 \times 10^{-4}$ then please calculate, giving your answers in standard form

ab = 1.50×10^{-1}

b/a = 1.47×10^{-6}

a + b = 3.20×10^{2}



IB MATH Warm Up

NUMBER & ALGEBRA

I. LOOK AT THE "NOTATION LIST" FOR A REFERENCE

Put the appropriate symbol next to the column headings and then put a tick or cross in each box of the table

R Q N Z

	Real	Rational	Natural	Integers
4.6	✓	✓		
$\sqrt{3}$				
-6	✓	✓		✓
7	✓	✓	✓	✓
$\frac{6}{7}$	✓	✓		
π	✓			

$\frac{46}{10}$ $\frac{46}{10}$ $\frac{-6}{1}$ $\frac{\pi}{\sqrt{5}}$

IB MATH **Warm UP**

NUMBER & ALGEBRA

I. LOOK AT THE "NOTATION LIST" FOR A REFERENCE

Put the appropriate symbol next to the column headings and then put a tick or cross in each box of the table

	Real (R)	Rational (Q)	Natural (N)	Integers (Z)
4.6	✓	✓		
$\sqrt{3}$	✓			
-6	✓	✓		✓
7	✓	✓	✓	✓
$\frac{6}{7}$	✓	✓		
π	✓			

0

II SI - UNITS

$ms^{-1} = \frac{m}{s^1} = m/s$ $\quad \frac{km^2}{km \cdot s} = \frac{km}{s}$ $\quad \frac{100\ cm}{1\ m}$

Which of the following units could be used to measure speed? Circle your answers

ms-1 $\quad cm^2/s \quad l/s \quad km^2/kms$

$\frac{5\ kg}{m^3} \cdot \frac{1000\ g}{1\ kg} \cdot \frac{1^3\ m}{100^3\ cm^3} = \frac{g}{cm^3}$

Convert the following density to g/cm^3

$5kg/m^3 =$ .005 g/cm^3

$\frac{5\ kg}{m^3} \times \frac{1000\ g}{1\ kg} \cdot \frac{1\ m}{100\ cm} \times \frac{1\ m}{100\ cm} \times \frac{1\ m}{cm}$

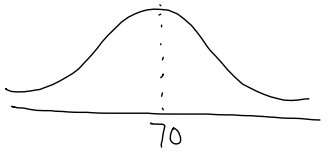
III Factor the quadratic $x^2 + 2x - 15$

$(x+5)(x-3)$

Questions on the homework?

p. 307 ... 1b 1c $\mu = 70$ $\sigma = 4$

b) $P(68 \le x \le 72) =$



c) $P(x \le 65) =$

p. 307 .. 76 $\mu = 40$ $\sigma = 6$

(b) In 52 weeks, how many would we expect to collect at least $45?

→ $P(x > 45) = .20232..$ 20.2%

→ 20.2% of 52 ≈ 10.1 weeks

Answers to HW

p. 303

5 a) 459 babies b) 446 babies

6 a i 34.1%
ii 47.7%

b i .136
ii .159
iii .0228
iv .841

9 a 41 days

b 254 days

c 213 days

p. 307

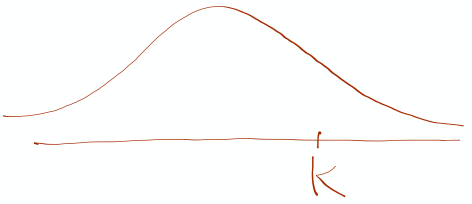
(1) a .341
b .383
c .106

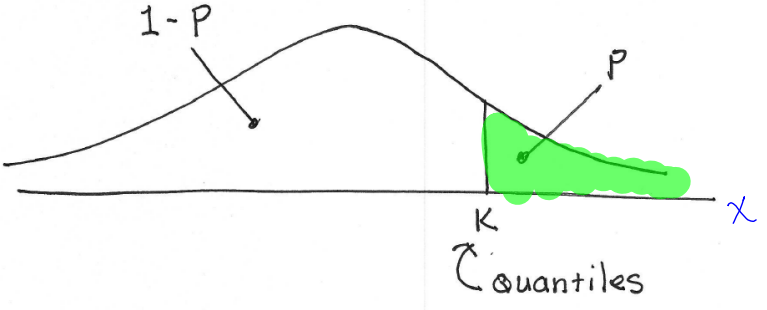
(4) a .334
b .166

(7) a i .904
ii .0912
b ≈ 11 weeks

Think Backwards

NOTES



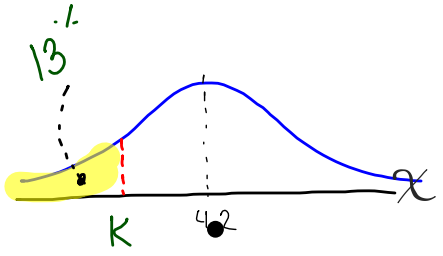


If $P(x \geq k) = p$

then $P(x \leq k) = 1 - p$

example 1 $X \sim N(4.2, 0.6^2)$

$\mu = 4.2 \quad \sigma = 0.6$



Find K

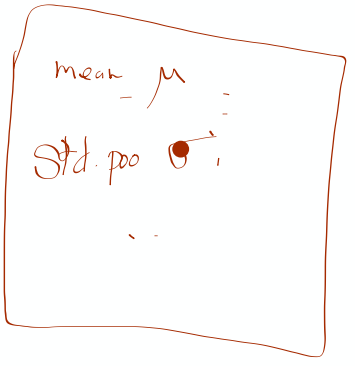
$p(x < K) = .13$

invNorm(.13, 4.2, 0.6)

(μ, σ)

Area to left of K

$K = 3.52$

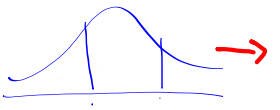


mean $\bar{x}$

Std. s

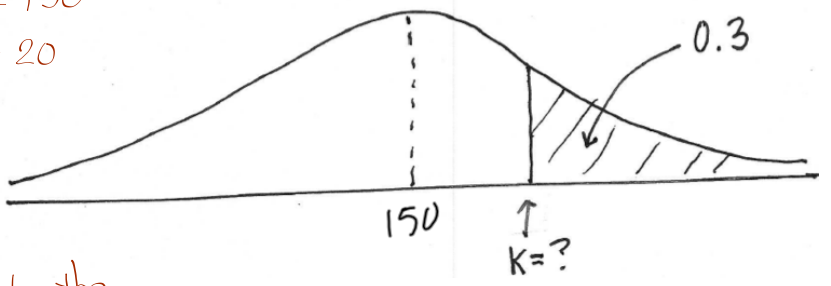
Example 2

$X \sim N(150, 20^2)$



$\mu = 150$

$\sigma = 20$

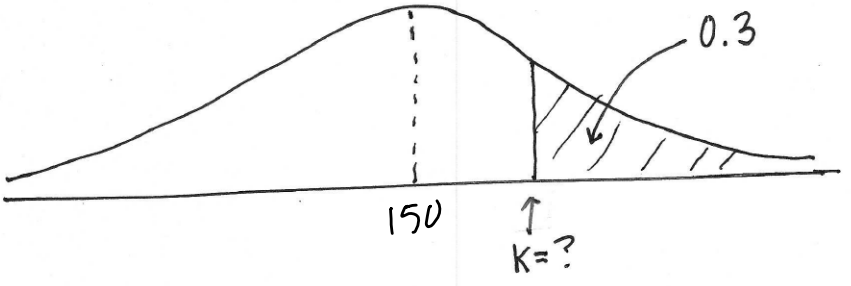


area to the left of K is 0.7

$K = \cancel{101}\ 160$

invNorm(.7, 150, 20)

$X \sim N(150, 20^2)$



$P(x \geq k) = 0.3$

$P(x \leq k) = 0.7$

$K = ?$

invNorm (0.7, 150, 20)

probability ~~area~~ to the left of K

μ σ

example 3

Suppose $X \sim N(20, 3^2)$

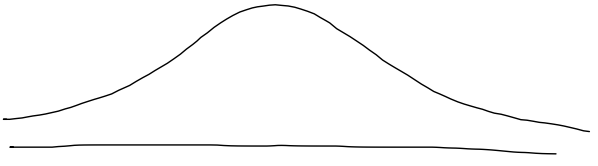
Illustrate with a sketch and find K

a) $P(X \leq k) = .348$

b) $P(X \leq k) = 0.9$

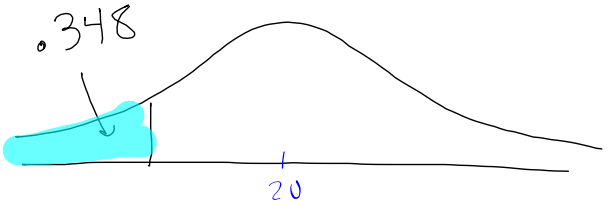
c) $P(X \geq k) = 0.8$

a) $P(X \leq k) = .348$

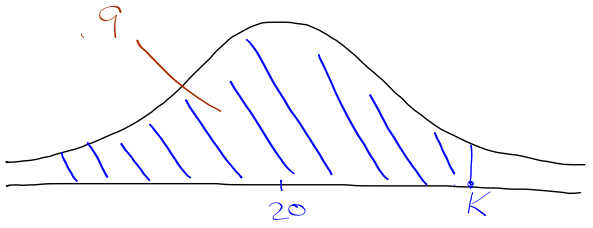


$K = \text{InvNorm}(.348, 20, 3)$

$K = 18.8$



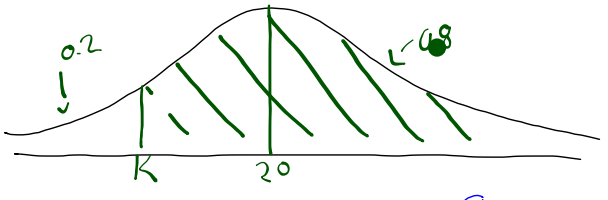
b) $P(X \leq K) = 0.9$

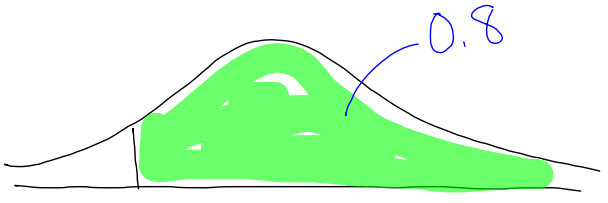


$K = 23.8$

c) $P(X \geq K) = 0.8$

so $K = 17.5$





next week there will be a small quiz on Normal Distribution
(Not a large Test)

ON mon OR Tuesday

on Monday, we'll start a 9 day unit on Statistical Applications

BB

Assignment:

- **Ch 10 Packet**

  p.307....9
  p.309.....2, 5, 6

diagrams and good notation a must!