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

Pick up the Warm Up (but skip II)

(You'll need the Pink Notation List)

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				

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	✓			

$\sqrt{9}$

$-\frac{6}{1}$

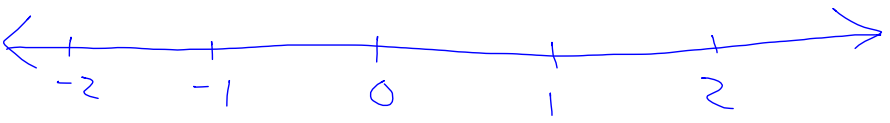
$1.23\overline{6}$

$\frac{4.6}{10}$ $\frac{46}{100}$

$\sqrt{9}$ $4+6i$

1.2 $\sqrt{10}$ $7i$

~~$5i$~~



integ

Inter

7.2

$\frac{}{3}$

II. PERCENTAGE ERRORS (See the Class Formula Sheet)

Your GDC should be in degree mode

Consider the following expression

$$b = \frac{15\sin 40}{\sin 60}$$

Calculate sin 40 and sin 60 giving your answers correct to 3 significant figures and use these answers to calculate the value of b to 3 decimal places

Sin 40 = .643 sin 60 = .866 b= 11.137

Now calculate the value of b without rounding either sin 40 or sin 60 giving your answer correct to 3 decimal places

b= 11.133 more exact

approx

Now calculate the percentage error in your first answer for b

% error = $\left|\frac{11.137 - 11.133}{11.133}\right| \times 100 = .0359\%$

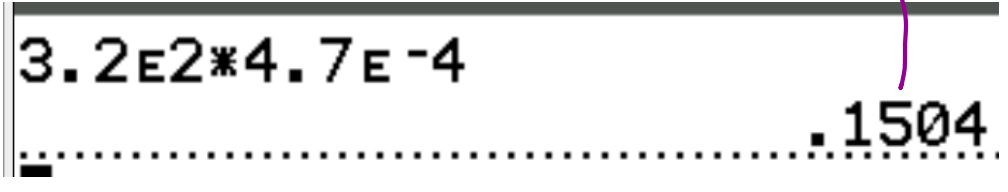
III STANDARD INDEX FORM (Scientific Notation)

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}



IV SI - UNITS

a^{-2} $\frac{1}{a^2}$

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

ms-1 cm²/s l/s km²/kms $\frac{km^2}{km \cdot s}$ $\frac{km}{s}$ $m \cdot s^{-1}$ $\frac{m}{s}$

Convert the following density to g/cm³

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

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

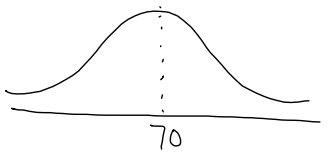
V Factor the quadratic $x^2 + 2x - 15$

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

Questions on the homework?

p. 307 ... 16 1c $\mu = 70$ $\sigma = 4$

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



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

p. 307 ... 7b $\mu = 40$ $\sigma = 6$

(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

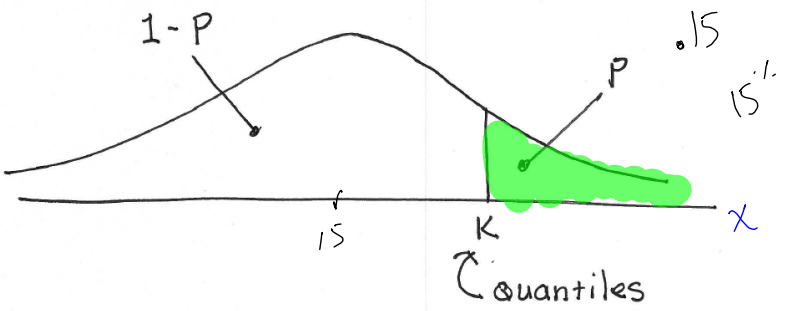
7) a i .904
ii .0912

b ≈ 10.1 weeks

Think Backwards

NOTES

quantile



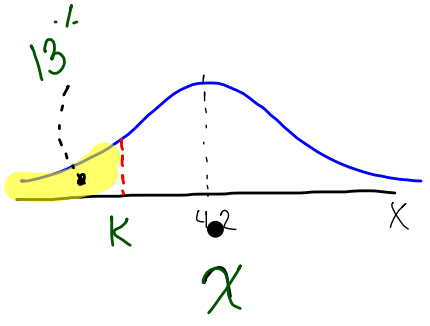
If $P(x \geq k) = p$

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

$P(x \geq k) = .8$

$P(x \leq k) = 1 - .8$

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



Find K

$p(x < K) = .13$

invNorm (.13, 4.2, 0.6)

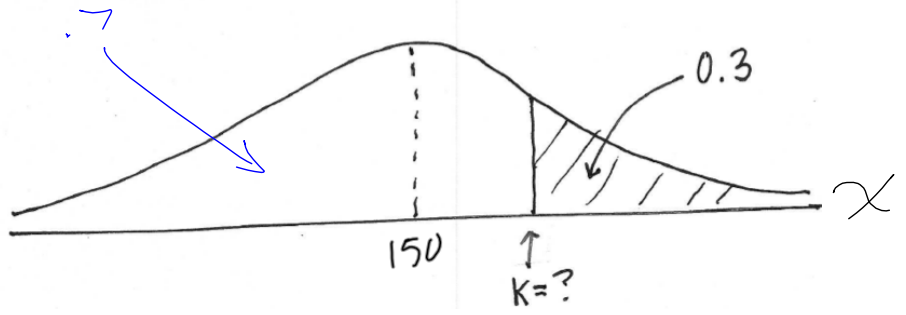
μ σ

Area to left of K

$K = 3.52$

Example 2

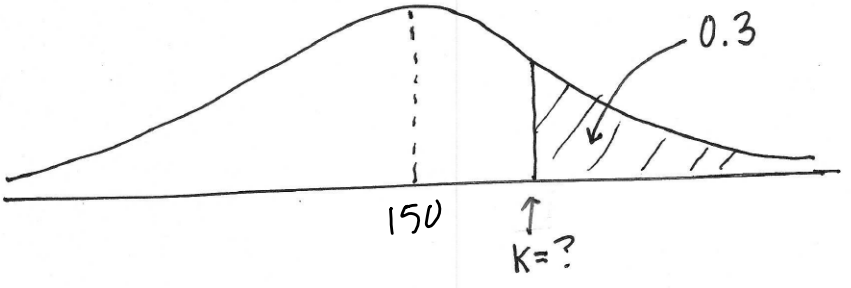
$X \sim N(150, 20^2)$



$P(x \geq k) = .3$

$P(x \leq k) = 1 - .3 = .7$

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



$P(x \geq k) = 0.3$

$P(x \leq k) = 0.7$

$K = ?$

$K = 160$

invNorm (0.7, 150, 20)

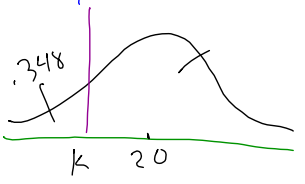
probability ~~area~~ to the left of K

μ σ

example

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

Illustrate with a sketch and find K

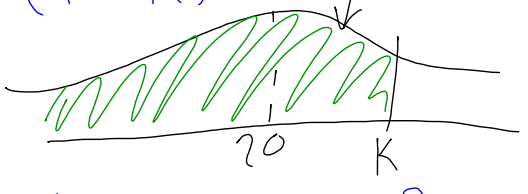


a) $P(X \leq K) = .348$

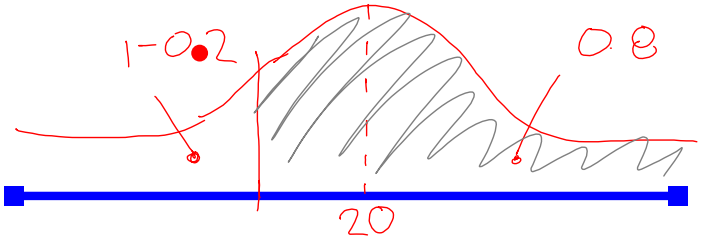
b) $P(X \leq K) = 0.9$

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

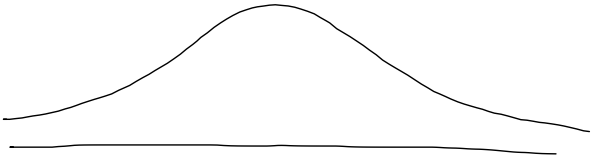
b) $P(X \leq K) = 0.9$



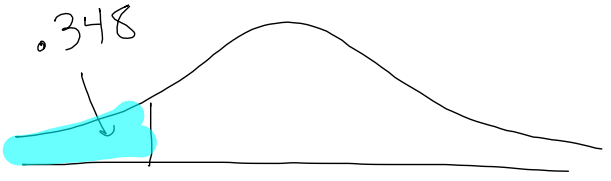
c) $P(X \geq K) = 0.8$



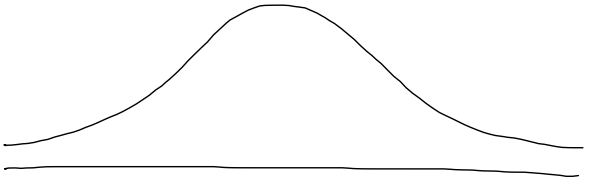
a) $P(X \leq k) = .348$



$k =$ InvNorm ( )



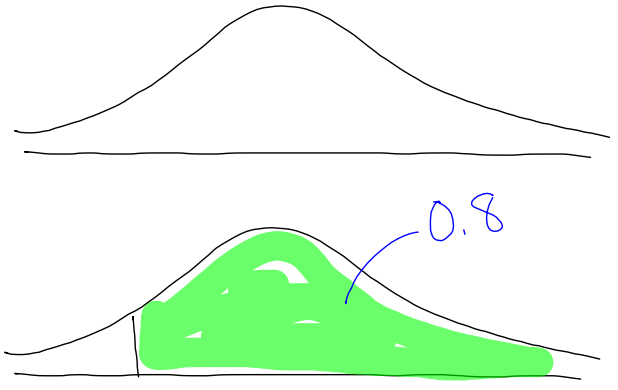
b) $P(X \leq k) = 0.9$



$k =$

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

so $K =$



next week there will be a small quiz on Normal Distribution

(Not a large Test)

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

See your test

Assignment:

- **Ch 10 Packet**

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

diagrams a must

Mr. C → pdf