

Statistics Lecture 1



Feb 19-8:47 AM

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ELAC 1990

Math 227S M-Th 8:45 - 10:05

Notes, lecture recordings, and all materials are/will be available in my website www.mymathclasses.com

Office hrs are virtual (Zoom)

MW 5:00 - 7:00 PM

TTh 12:30 - 2:00 PM

Visit the website, explore the syllabus, do the last page and submit in

Canvas. All communications must be done via Canvas or in person.

Aug 26-8:56 AM

Some Math Review:

1) Reduce $\frac{36}{120} = \frac{\cancel{3} \cdot \cancel{12}}{\cancel{12} \cdot 10} = \frac{3}{10}$

1) $\frac{3}{10}$

2) Write .2% in

a) Decimal .2% = .2(.01) = $\boxed{.002}$

a) $.002$

b) Reduced fraction

.2% = $\frac{.2}{100} = \frac{10(.2)}{10(100)} = \frac{\cancel{2}}{\cancel{10}(100)} = \frac{1}{500}$

b) $\frac{1}{500}$

Aug 26-9:04 AM

3) Write .000075 in Scientific Notation.

$.000075 = \boxed{7.5 \times 10^{-5}}$

$N \times 10^n$
 \uparrow
 $1 \leq N < 10$
 any integer

3) $\underline{7.5 \times 10^{-5}}$

4) Write 6.25×10^{-10} in standard notation.

$\underbrace{0000000000}_{10 \text{ zeros}} 6.25$

Optional

4) $\underline{0.000000000625}$

Aug 26-9:09 AM

5) In a class of 40 students, 5 were late.
what percent of all students were late?

5 is what percent of 40?

$$5 = \frac{P}{100} \cdot 40$$

Multiply by 100

$$5 \cdot 100 = 40 \cdot P$$

Divide by 40

$$\frac{500}{40} = P$$

$$P = 12.5$$

$$\underline{5) 12.5\%}$$

Aug 26-9:14 AM

Simplify $\frac{5(120) - 30^2}{5(5-1)}$

$$= \frac{600 - 900}{5 \cdot 4} = \frac{-300}{20} = \boxed{-15}$$

-15

Simplify $\frac{28 - 20}{\frac{10}{\sqrt{4}}}$

$$= \frac{8}{\frac{10}{2}} = \frac{8}{5} = \boxed{1.6}$$

1.6

Simplify

$$1.96 \cdot \sqrt{\frac{(.8)(.2)}{25}} = 1.96 \cdot \sqrt{\frac{.16}{25}}$$

$$= 1.96 \cdot \frac{.4}{5}$$

Round to

1 - decimal $\rightarrow .2$

$$= \frac{(1.96)(.4)}{5} = \frac{.784}{5}$$

2 - decimal $\rightarrow .16$

$$= \boxed{.1568}$$

3 - decimal $\rightarrow .157$

Aug 26-9:18 AM

! Factorial

$$0! = 1$$

$$1! = 1$$

$$2! = 2 \cdot 1 = 2$$

$$3! = 3 \cdot 2 \cdot 1 = 6$$

$$4! = 4 \cdot 3 \cdot 2 \cdot 1 = 24$$

$$5! = 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 120$$

$$n! = n(n-1)(n-2) \cdots 3 \cdot 2 \cdot 1$$

Simplify

$$\frac{6!}{3!} = \frac{\cancel{6} \cdot \cancel{5} \cdot 4 \cdot 3 \cdot 2 \cdot 1}{\cancel{3} \cdot \cancel{2} \cdot 1}$$

$$= 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$$

$$= \boxed{120}$$

Simplify

$$\frac{7! - 5!}{4!} = \frac{7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 - 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}{4 \cdot 3 \cdot 2 \cdot 1}$$

$$= \frac{5040 - 120}{24} = \frac{4920}{24} = \boxed{205}$$

Aug 26-9:30 AM