MPM1DI

Summative Assessment Review - Day 1 Chapters 1, 2 & 3 (Units 1, 2 & 4)

Unit 1: [NUMBER SENSE & ALGEBRA STRAND]

☺ **Integers (Review work with integers!)**

☺ **Rational Number Operations**

- ◎ Convert mixed numbers to improper fractions
- ◎ To add or subtract find a common denominator then add or subtract the numerators, keep the denominator the same
- ◎ To multiply reduce if possible then multiply straight across on both the numerator and the denominator
- ◎ To divide multiply by the reciprocals.

Example 1. Simplify:

a) $\frac{-3}{5}+\left(\frac{-3}{4}\right)-\frac{7}{10}$ b) $\left(\frac{2}{3}-\frac{1}{3}\right)\div\left(\frac{-3}{4}-\frac{-2}{3}\right)$

Unit 2: (Textbook Chapter 3) [NUMBER SENSE & ALGEBRA STRAND]

☺ **Exponent Laws (text 3.2, 3.3)**

◎ $a^m \times a^n = a^{m+n}$ To multiply powers with the same base, keep the base the same and add the exponents.

Example 2. a) $4^5 \bullet 4^3$ b) $3^2 \bullet 3^5$

◎ $\frac{a^m}{a^n} = a^{m-n}$ To divide powers with the same base, keep the base the same and subtract the exponents.

Example 3. a) $4^6 \div 4^3$ b) $4^{5x} \div 4^{3x}$

◎ $(a^m)^n = a^{m \times n}$ Power of a power: Keep the base the same and multiply the exponents.

Example 4. $(2^5)^3$

Example 5. Simplify: a) $\frac{(m^5)(m^3)}{m^2}$ b) $x^{12} \div \left(x^2\right)^5$

☺ **Algebra (text 3.4 – 3.7)**

◎ Adding and Subtracting Polynomials

- Can only add/subtract <u>like terms</u> (same variable with the same exponents)

  Example 6. $3x^2$, $4x^2$, $-2x^2$ ( )

  $3x$, $3x^2$, $-3x^3$ ( )

- Distributive Property

  $a(b + c) = ab + ac$

  Example 7. Expand and Simplify:

  a) $2(3x + 5)$ b) $\frac{1}{2}(6x + 8) - (2x - 3)$ c) $3x(2x^2 – 4x)$

Unit 4: (Textbook Chapter 2) [LINEAR RELATIONS STRAND]

☺ Relations (Chapter 2)

- Graphing a table of data to create scatter plots
- Line vs. Curve of best fit
- Linear vs. Non-linear relations
- Interpolation vs. Extrapolation

<u>Hypotheses, Sources of Data and Sampling Principles</u>

Primary Data: _____ _____that a researcher gathers for an experiment.

Secondary Data: Data that _____ _____has already gathered for another purpose (usually from publications like the _____ or _____).

Population: The _____ _____of people or items being studied.

Census: A survey of ___ members of a _____.

Sample: Any group of people or items selected from a _____.

Random Sample: A sample in which ___ _____ of a _____have an _____chance of being chosen.

Simple Random Sample: Choosing a _____ number of members _____ from the _____population.

Systematic Random Sampling: Choosing members of a population at _____ from a population.

Stratified Random sampling: Dividing a population into _____ groups and then choosing a _____ number randomly from each group.

Bias: Error resulting from choosing a sample that does not represent the _____ population

Do:

Pages 98 # 1 – 4, 7 – 8 (ch. 2)

Pages 178-179 # 5, 11 – 19, 21 – 23 (ch 2,3)

Integer and Fractions – Extra Practice Worksheet

More on next page

Redo old tests from units 1 and 2 and 4.

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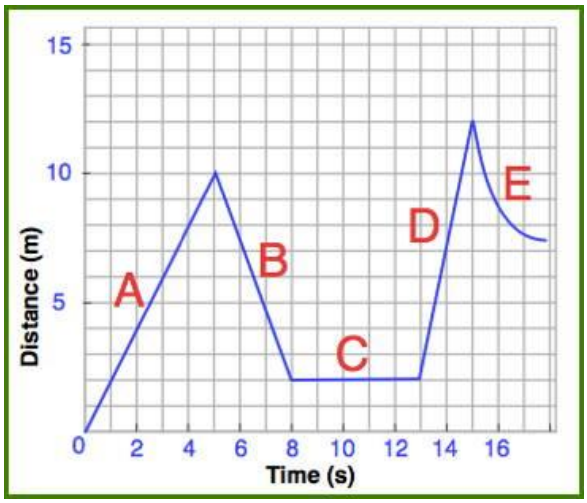
Ex. 1: Determine the sampling method used in each situation.

a) One thousand participants in a clinical trial were divided into groups based on their ages (ie. 20-24, 25-29, etc.). Then from these age groups, 20% of the participants were selected randomly to create a sample of 200 individuals.

b) A random number generator was used to select an individual on a numbered list. From there, every 15th individual on the list was also chosen to be part of the sample.

Ex 2: Jeff's movements after he left his house are shown on this distance-time graph. Describe his movements (starting and stopping points and speed changes).

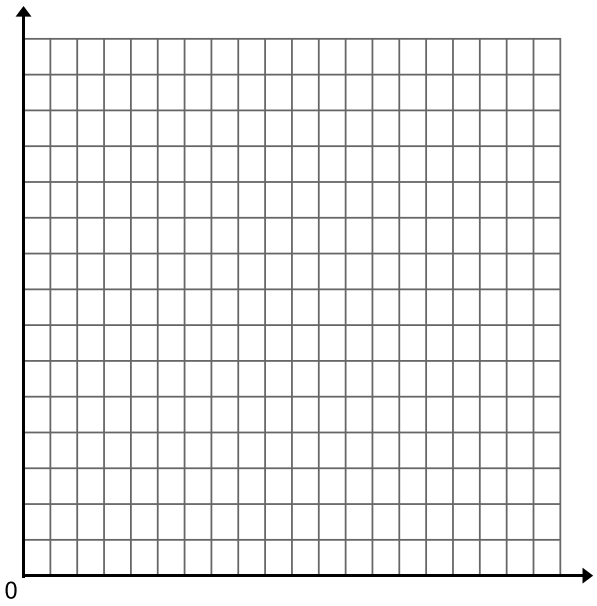


Independent Variable :
variable that affects another variable.
Always plotted on the ___-axis.

Dependent Variable :
variable that is affected by some other variable (i.e. its value depends on another).
It is always plotted on the ___-axis.

Ex. 3: The number of hours per week a person spends training to run 100 m and the time it took this person to run the 100 m are recorded in the table below.

Hours per week training	Time (sec) to run 100 m
10	14.2
3	15.4
6	15.1
8	14.8
16	13.8
8	14.4
7	14.5
2	15.5
19	13.5
14	13.9



a) Identify the independent variable.

b) Graph the data.

c) Draw a line or curve of best fit.

d) Predict the time it would take for a person who trains 12 hours per week to run 100m. Is this an example of interpolation or extrapolation?

e) If a person ran the 100m in 12 seconds flat, about how many hours a week would they train? Is this an example of interpolation or extrapolation?

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Integers and Fractions – Extra Practice Name:_____

1. Evaluate.

a. $(-3)(8)$

b. $\dfrac{-30}{-6}$

c. $(-2)\times(-2)\times(-2)$

d. $(+3)+(-9)$

e. $\dfrac{(6)(-15)}{-5}$

f. $5+(-3)+7$

g. $(+8)+(+3)-(-6)+(-3)$

h. $(-5+3)-(8-12)$

i. $(+3)-(-2)(-5)$

j. $(-12)\div(-2)+(-5)(+4)$

k. $\dfrac{2(-5+3)-2(5-1)}{-7+4}$

l. $4[-6(-2-7)-5(7+2)]$

2. Use your knowledge of BEDMAS, fractions and integers to evaluate each expression. Write your answers in lowest terms.

a. $\dfrac{5}{9}-\dfrac{2}{9}$

b. $\dfrac{4}{5}+\dfrac{7}{15}$

c. $3\dfrac{1}{4}+2\dfrac{2}{3}$

d. $-\dfrac{3}{4}-\left(\dfrac{-2}{5}\right)$

e. $\left(\dfrac{50}{-9}\right)\times\left(\dfrac{-27}{25}\right)$

f. $\left(\dfrac{5}{8}\right)\div\left(-\dfrac{3}{2}\right)$

g. $\dfrac{7}{8}+\left(-\dfrac{1}{4}\right)\times 5$

h. $\dfrac{-3}{5}\div\left(\dfrac{-5}{-12}\right)\div\left(\dfrac{-9}{10}\right)$

i. $\left(-\dfrac{3}{5}\times\dfrac{2}{3}\right)+\dfrac{5}{6}\div\left(-\dfrac{5}{3}\right)$

SOLUTIONS:

1. a. – 24 b. 5 c. – 8 d. – 6 e. 30 f. 9
   g. 14 h. 2 i. – 7 j. – 14 k. 4 l. 36

2. a. $\frac{1}{3}$ b. $\frac{19}{15}$ *or* $1\frac{4}{15}$ c. $5\frac{11}{12}$ *or* $\frac{71}{12}$ d. $-\frac{7}{20}$ e. 6 f. $-\frac{5}{12}$
   g. $-\frac{3}{8}$ h. $1\frac{3}{5}$ *or* $\frac{8}{5}$ I $-\frac{9}{10}$