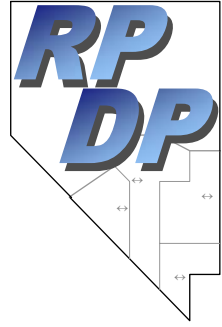


HSPE Mathematics



Hints for SUCCESS – The BASICS

Be positive, be reassuring. Tell the students that if they have done what you have asked in preparation, then they are prepared for the test. They *will* pass the test!

1. Have students read entire test before starting; place a “√” by problems they know how to do for sure, a “?” by the ones they are not sure of, and an “X” by the ones they have no idea how to answer.
2. Do the “√” problems first, followed by the problems marked with a “?”, then do the “X”.
3. This is important, the goal is not to make a 100%, the goal is to pass the test. Make sure you get every “√” problem correct!!!
4. Don’t do problems in your head, the distracters will kill you. EX. If the dimensions of a rectangle are *doubled*, how is the area affected? Many students will answer “*doubled*”. The answer is “*quadrupled*”. Do the math!
5. Don’t leave any answers blank. On the problems marked with an “X”, eliminate dumb answers before making an intelligent guess.
6. Use the pictures, if they look equal, they probably are equal on *this* test.

Word Associations – English to Math Translations

STATISTICS

MEAN – Know the TOTAL # of points

MEDIAN – MIDDLE -Arrange the scores

MODE – most frequent

RANGE – DIFFERENCE in high and low scores

GRAPHING

CIRCLE – Take fraction of 360° - central angle

BOX & WHISKER – Find the MEDIAN, then find the MEDIANS for top and bottom halves.

STEM & LEAF – tens column – units column

GEOMETRY

AREA – MULTIPLY

VOLUME – MULTIPLY THE AREA BY THE HEIGHT

PERIMETER – ADD

CIRCUMFERENCE – $2 \pi R$

IRREGULAR SHAPES – turn into rectangles

ANGLES

COMPLEMENTARY (C – corner 90°) & SUPPLEMENTARY (S – straight 180°)

VERTICAL ANGLES are equal

CORRESPONDING ANGLES are equal with || lines

SUM OF INTERIOR ANGLES OF A TRIANGLE – 180°

SUM OF INTERIOR ANGLES POLYGON $(n - 2) 180^\circ$

SUM OF EXTERIOR ANGLES POLYGON – 360°

PROBABILITY

ONE STEP; Count – PROBABILITY = SUCCESS/TOTAL

MULTI-STAGE; DRAW A TREE DIAGRAM

COUNTING METHODS

HOW MANY DIFFERENT WAYS – MULTIPLY

PYTHAGOREAN THEOREM

RIGHT TRIANGLES – $c^2 = a^2 + b^2$

RATIO & PROPORTION

TYPE I – Make sure the ratios match

TYPE II – Make an equation

SIMILAR POLYGONS

PERCENTS

PROPORTION make sure ratios match

FORMULA

PLUG INTO FORMULAS & SOLVE

SEQUENCES

Count items in each picture and LIST – continue the pattern

If adding same number, multiply that # by one less then term you are looking for

If adding different number, list and look for pattern

Draw a picture

CHARTS

Plug in the numbers to see which work, Be careful, avoid using 0 or 1.

ALGEBRA

Equations

Linear (Order of Operations in reverse)

Quadratics – plug in answers & check

Systems (2 equations) – plug in ordered pairs

Word Problems

Word translations (don't read literally, 4 less than x is $x - 4$)

REREAD WORD PROBLEMS TO GET INFORMATION

Formulas / Expressions– rewrite and plug in numbers

SLOPE

Thinking of getting paid – POSITIVE

PARALLEL LINES – same slope

PERPENDICULAR LINES – negative (opposite) reciprocal slope

Number in front of x is slope; $y = 4x + 3$ – slope is 4

FACTORING

Check for the first & last terms, then “OI”, the middle term