

P9-2

M

NAME _____ MEET 2 PYTHAGOREAN DIVISION DEC. 4, 1997

GRADE 9
30 MINUTES
ANSWER COLUMN

DIRECTIONS: Place your answer to each question below in the answer column.

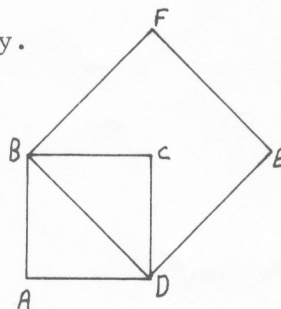
1) Find the value of $\frac{7^6 - 7^5 + 7^4}{7^4}$ in simplest form.

1) _____

2) If $x^2 - y^2 = 48$ and $x - y = 4$, find the value of $x + y$.

2) _____

3) Both ABCD and BDEF are squares where BD is a diagonal of square ABCD. The ratio of the area of BDEF to ABCD is :



3) _____

- a) $\sqrt{2}:1$ b) $\sqrt{3}:1$ c) $2:1$ d) $\sqrt{5}:1$

4) Weights are placed at A (W_A) and B (W_B).



If the length $\overline{AF} \times W_A = \text{length } \overline{BF} \times W_B$,

then they will balance at F. If $W_A = 20$ lbs., $AF = 5$ ft., $W_B = 25$ lbs.

and $FB = 4$ ft., the weights balance because $20 \times 5 = 25 \times 4 = 100$. If the weight at A is 35 lbs. and that at B is 25 lbs. and the length from A to B is 12 feet, then what should be the length of AF for the weights to balance at F?

4) _____

5) Mr. Starr's salary is $1\frac{1}{2}$ times as large as Mr. Thomas' salary. The percentage decrease in Mr. Starr's salary is the same as the percentage increase in Mr. Thomas' salary. They now earn the same salary. By what percent was Mr. Starr's salary decreased?

5) _____

6) $\frac{1}{2} = \frac{1}{3} + \frac{1}{6}$ (two fractions). $\frac{1}{2} = \frac{1}{3} + \frac{1}{6} = \frac{1}{3} + (\frac{1}{3} \cdot \frac{1}{2}) = \frac{1}{3} + \frac{1}{3} (\frac{1}{3} + \frac{1}{6}) =$

$\frac{1}{3} + \frac{1}{9} + \frac{1}{18}$ (three fractions). $\frac{1}{2} = \frac{1}{3} + \frac{1}{9} + \frac{1}{18} = \frac{1}{3} + \frac{1}{9} + \frac{1}{9} (\frac{1}{2}) =$

$\frac{1}{3} + \frac{1}{9} + \frac{1}{9} (\frac{1}{3} + \frac{1}{6}) = \frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \frac{1}{54}$ (four fractions). The above

pattern is one way to write $\frac{1}{2}$ as the sum of 2, 3, 4, etc. unit

fractions (fractions with numerator 1). Write $\frac{1}{2}$ as the sum of 5 unit

fractions.

6) _____