MEET 1 PYTHAGOREAN DIVISION NOV. 6, 1997 GRADE 9 SOLUTIONS

The answer to each question is in parenthesis at the beginning of each solution.

1) (b or sometimes) 7>6 and -2>-3 where -14>-18. 10>6 and -2>-3 but -20<-18.

2) (3 and -2) $(x+3)^{x-3} = 1$ when the exponent = 0 (x = 3) or when x+3 = 1 (x = -2).
[$(x+3)^{x-2} = 1$ would have 3 solutions since the exponent is even when x+3 = -1 .]

3) (b or $6\sqrt{2}$) The diagonal of the large square is $10\sqrt{2}$ (by the Pythagorean Theorem). The diagonal of the small square is $4\sqrt{2}$. $10\sqrt{2} - 4\sqrt{2} = 6\sqrt{2}$.

4) (6) $6S^2 = S^3$ when S = 6 . For S<6, the number of square units in the S.A. is greater than the number of cubic units in the volume.

5) (60) $ab \cdot bc \cdot ac = 10 \cdot 12 \cdot 30 = 3600$. $a^2b^2c^2 = 3600$; $abc = 60$. or; $\frac{ab}{ac} = \frac{10}{30} = \frac{1}{3}$.
$c = 3b$; $3b^2 = 12$; $b = 2$. If b = 2, c = 6 and a = 5. abc = 60.

6) (31) Let x = the number of kids ahead of John. x = the number of kids behind John. Therefore, x + 1 = the number of kids on the merry-go-round.
$\frac{5}{6}x + \frac{1}{5}x = x + 1$; x = 30 and x+1 = 31 kids on the merry-go-round.