## GENERAL DESCRIPTION OF SCORING GUIDELINES FOR MATHEMATICS OPEN-ENDED QUESTIONS

4 - The response demonstrates a thorough understanding of the mathematical concepts and procedures required by the task.

The response provides correct answer(s) with clear and complete mathematical procedures shown and a correct explanation, as required by the task. Response may contain a minor "blemish" or omission in work or explanation that does not detract from demonstrating a thorough understanding.

3 - The response demonstrates a general understanding of the mathematical concepts and procedures required by the task.

The response and explanation (as required by the task) are mostly complete and correct. The response may have minor errors or omissions that do not detract from demonstrating a general understanding.

2 - The response demonstrates a partial understanding of the mathematical concepts and procedures required by the task.

The response is somewhat correct with partial understanding of the required mathematical concepts and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

1 - The response demonstrates a minimal understanding of the mathematical concepts and procedures required by the task.

0 - The response has no correct answer and insufficient evidence to demonstrate any understanding of the mathematical concepts and procedures required by the task for that grade level.

Response may show only information copied from the question.
Special Categories within zero reported separately:
BLK (blank)...........Blank, entirely erased, or written refusal to respond
OT $\qquad$ Off task

LOE $\qquad$ Response in a language other than English
IL Illegible

Formulas that you may need to work questions on this test are found below. You may refer back to this page at any time during the mathematics test.

Exponential Properties

$$
\begin{aligned}
a^{m} \cdot a^{n} & =a^{m+n} \\
\left(a^{m}\right)^{n} & =a^{m \cdot n} \\
\frac{a^{m}}{a^{n}} & =a^{m-n} \\
a^{-1} & =\frac{1}{a}
\end{aligned}
$$

## Algebraic Equations

Slope: $m=\frac{y_{2}-y_{1}}{x_{2}-x_{1}}$
Slope-Intercept Form: $\quad y=m x+b$

## Pythagorean Theorem



$$
a^{2}+b^{2}=c^{2}
$$

Cone


$$
V=\frac{1}{3} \pi r^{2} h
$$

## Cylinder



$$
V=\pi r^{2} h
$$

Sphere


$$
V=\frac{4}{3} \pi r^{3}
$$

