

Exponents and Scientific Notation: math test solutions, Grade 8 – download the PDF

Test solutions with the detailed point scale. Add up your points and spot what to review.

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 Evaluating powers

/ 4 pts

(a) $2^7 = 128$ (1 pt).

(b) $(-3)^3 = -27$ (1 pt).

(c) $6^{-2} = \frac{1}{36}$ (1 pt).

(d) $9^0 = 1$ (1 pt).

2 Rules of exponents

/ 4 pts

(a) $3^{5+6} = 3^{11}$ (1 pt).

(b) $10^{12-7} = 10^5$ (1 pt).

(c) $7^{2 \times 5} = 7^{10}$ (1 pt).

(d) $2^4 \times (y^3)^4 = 16y^{12}$ (1 pt).

3 Converting numbers

/ 3 pts

- (a) $3,720,000 = 3.72 \times 10^6$ (1 pt).
- (b) $0.0000805 = 8.05 \times 10^{-5}$ (1 pt).
- (c) $6.1 \times 10^{-3} = 0.0061$ (1 pt).

4 Operations

/ 4 pts

- (a) $1.2 \times 5 = 6$ and $10^{4+3} = 10^7$, so 6×10^7 (1 pt).
- (b) $\frac{9}{3} \times 10^{8-2} = 3 \times 10^6$ (1 pt).
- (c) $2.5 \times 10^5 = 0.25 \times 10^6$, so the sum is 5.75×10^6 (1 pt).
- (d) $7 \times 4 = 28$ and $10^{-3+(-5)} = 10^{-8}$, so $28 \times 10^{-8} = 2.8 \times 10^{-7}$ (1 pt).

5 Memory cards

/ 3 pts

Divide the capacity by the size of one photo (1 pt): $\frac{6.4 \times 10^{10}}{4 \times 10^6} = 1.6 \times 10^4$ (1 pt).

About **16,000** photos fit on the card (1 pt).

6 Hair and bacteria

/ 2 pts

Divide the widths (1 pt): $\frac{8 \times 10^{-5}}{2 \times 10^{-6}} = 4 \times 10^1 = 40$. The hair is about 40 times wider than the bacterium (1 pt).



Test yourself: quick challenge for Grade 8

Change level

Level : Grade 8

6 random questions, instant feedback.

 **Start the challenge**

 Keep exploring with Zyro

 Math tests

Exponents and Scientific Notation: math test, Grade 8

 Math lessons

Exponents and Scientific Notation: math lesson, Grade 8

 Math quizzes

Exponents and Scientific Notation: math quiz, Grade 8

 Math tests

Solving Linear Equations: math test, Grade 8



Math tests

Proportional Relationships and Slope:
math test, Grade 8



Math lessons

Solving Linear Equations: math lesson,
Grade 8

Zyro vous emmène sur nos sites partenaires

Embarquez pour d'autres planètes du savoir et leurs applis.

Décollage