

Name \_\_\_\_\_ Date \_\_\_\_\_

## The Air Force and Exponents

Instructions: The Air Force constantly uses exponents as a method to take inventory of many vital resources. Write each exponent in expanded form and then calculate the solution for each. Use your calculator to help if needed.



$30^8$  \_\_\_\_\_

$22^5$  \_\_\_\_\_

$10^9$  \_\_\_\_\_

$8^4$  \_\_\_\_\_

$97^2$  \_\_\_\_\_

Circle the correct answer:

Which is bigger?  $8^4$  or  $4^8$

Which is smaller?  $20^{31}$  or  $31^{20}$

Which is bigger?  $4^{-3}$  or  $4^3$



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## Answer Key

Instructions: Write each exponent in expanded form and then calculate the solution for each. Use your calculator to help if needed.



$$30^8 \text{ ___ } 30 \times 30 \times 30 \times 30 \times 30 \times 30 \times 30 \times 30 = 656,100,000,000 \text{ ___}$$

$$22^5 \text{ ___ } 22 \times 22 \times 22 \times 22 \times 22 = 5,153,632 \text{ ___}$$

$$10^9 \text{ ___ } 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 1,000,000,000 \text{ ___}$$

$$8^4 \text{ ___ } 8 \times 8 \times 8 \times 8 = 4,096 \text{ ___}$$

$$97^2 \text{ ___ } 97 \times 97 = 9,409 \text{ ___}$$

Circle the correct answer:

Which is bigger?  $4^8$

Which is smaller?  $11^{20}$

Which is bigger?  $4^3$

