The Biggest Number Ever

NAME: .....

CLASS: .....

DATE: .....

Basic

1) Write the following numbers in scientific notation:

a) 6900 b) 840 c) 91,000

d) 0.007 e) 0.0652 f) 0.000003

2) Write each of the following numbers out in full and then in standard form:

a) 8 million b) 9.5 million c) 26 million

3) A cafe sells 65,000 litres of coffee each year. Write this in scientific notation.

4) Write the following numbers in full:

a) 2.7×10^{4} b) 6.28×10^{5} c) 4.38×10^{8}

d) 7.3×10^{-2} e) 9.7×10^{-5} f) 1.8236×10^{-1}

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Core

1) Write these numbers in scientific notation:

a) 2400 b) 8,600,000 c) 0.982

d) 0.000 000 082 e) 0.061 f) 59.3

2) The prefix kilo means 10^3. What power of 10 do these denote?

a) micro b) giga c) pico

d) tera e) nano f) peta

3) The Earth weighs 5.97 x 10^{24}kg. The Moon weighs 7.3 x 10^{21}kg. How many times heavier is the Earth than the Moon?

4) Calculate the following and give your answers in standard form:

a) 0.84 x 23,000 b) 175.4 ÷ 6340

c) 472.3 x 0.000564 d) 752,000 ÷ 0.862

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Advanced

1) Make the powers of 10 the same and then add the following in standard form. Give your answer in standard form.

a) $4.72 \times 10^3 + 3.878 \times 10^4$

b) $16.38 \times 10^{-3} - 1.29 \times 10^{-2}$

2) Calculate the following

a) 5!

b) $\frac{6!}{2!}$

c) $\frac{7! \times 3!}{5! \times 2!}$

3) Harry has a part-time job working three evenings out of five. His job is flexible and he can choose which evenings he wants to work, as long as he lets his boss know on a Sunday night which evenings he will be working in the following week. How many different combinations are there for Harry to work?

4) Evaluate each of the following:

a) ${}^5C_3$

b) ${}^7C_2$

c) ${}^4C_0$

d) ${}^8C_1$

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ANSWERS

Basic

1) a) 6.9×10^3 b) 8.4×10^2 c) 9.1×10^4
d) 7.0×10^{-3} e) 6.52×10^{-2} f) 3.0×10^{-6}

2) a) 8,000,000 8.0×10^6 b) 9,500,000 9.5×10^6 c) 26,000,000 2.6×10^7

3) 6.5×10^4 litres

4) a) 27,000 b) 628,000 c) 438,000,000
d) 0.073 e) 0.000097 f) 0.18236

Core

1) a) 2.4×10^3 b) 8.6×10^6 c) 9.82×10^{-1}
d) 8.2×10^{-8} e) 6.1×10^{-2} f) 5.93×10^1

2) a) $x\ 10^{-6}$ b) $x\ 10^9$ c) $x\ 10^{-12}$
d) $x\ 10^{12}$ e) $x\ 10^{-9}$ f) $x\ 10^{15}$

3) 818 times (nearest whole number)

4) a) 1.932×10^4 b) 2.767×10^{-2}
c) 2.66×10^{-1} d) 8.724×10^5

Advanced

1) a) $43.50 \times 10^3 = 4.350 \times 10^4$ b) $0.348 \times 10^{-2} = 3.48 \times 10^{-3}$

2) a) 120 b) 360 c) 126

3) 10

4) a) 10 b) 21
c) 1 d) 8