Chapter 1 Test 2 Study Guide

Indicate the answer choice that best completes the statement or answers the question.

1) To which set of numbers $\frac{7}{8}$ belong?

    A) rational

    B) integer

    C) irrational

    D) whole

Without using a calculator, write the fraction or mixed number as a decimal.
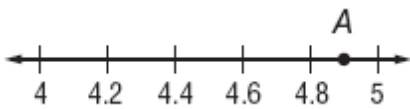
2) $-8\frac{11}{18}$

    A) $-8.\overline{61}$

    B) $-8.6\overline{1}$

    C) -8.61

    D) $8.6\overline{1}$

Without using a calculator, write the decimal as a fraction or mixed number in simplest form.

3) $7.3\overline{51}$

    A) $7\frac{351}{1000}$

    B) $\frac{13}{37}$

    C) $7\frac{351}{999}$

    D) $7\frac{13}{37}$

4) Which of the following is closest to point A on the number line below?

    A) $\frac{1}{2}$

    B) $\sqrt{20}$

    C) $\sqrt{24}$

    D) 480%

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Replace each ◯ with <, >, or = to make a true statement.

5) $8.\overline{2}$ ◯ $8\frac{2}{9}$

    A) <

    B) >

    C) =

6) $\sqrt{9.8}$ ◯ $3.\overline{1}$

    A) <

    B) >

    C) =

Order each set of numbers from least to greatest.

7) $-\sqrt{12}$, $\sqrt{13}$, -3.5, 3.5

    A) $\sqrt{13}, 3.5, -\sqrt{12}, -3.5$

    B) $-3.5, -\sqrt{12}, 3.5, \sqrt{13}$

    C) $-\sqrt{12}, -3.5, 3.5, \sqrt{13}$

    D) $-3.5, -\sqrt{12}, \sqrt{13}, 3.5$

8) The distance from Earth to the Sun is 92,900,000 miles. What is this number in scientific notation?

    A) 92.9×10^{6}

    B) 9.29×10^{7}

    C) 9.29×10^{-6}

    D) 929×10^{5}

9) The mass of a paper clip is 9.4×10^{-4} kilogram. What is this mass in standard form?

    A) 94,000 kg

    B) 0.0000094 kg

    C) 0.0094 kg

    D) 0.00094 kg

Write the number in standard form.

10) 4.115×10^{5}

    A) 411,500

    B) 41,150

    C) 4,115

    D) 0.0000411500

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Write the number in scientific notation.

11) 0.000000515
   A) 5.15×10^7
   B) 5.15×10^{-6}
   C) 5.15×10^{-7}
   D) 5.15×10^{-8}

12) **POPULATION** The table lists the populations of five countries. List the countries from least to greatest population.

Country	Population
Australia	2×10^7
Brazil	1.9×10^8
Egypt	7.7×10^7
Luxembourg	4.7×10^5
Singapore	4.4×10^6

   A) Brazil, Luxembourg, Singapore, Australia, Egypt
   B) Luxembourg, Australia, Singapore, Egypt, Brazil
   C) Luxembourg, Singapore, Australia, Brazil, Egypt
   D) Luxembourg, Singapore, Australia, Egypt, Brazil

Evaluate the expression. Express the result in scientific notation.

13) $(7.3 \times 10^8)(2.4 \times 10^3)$
   A) 1.752×10^{11}
   B) 9.7×10^{11}
   C) 17.52×10^{11}
   D) 1.752×10^{12}

14) $\dfrac{4.62 \times 10^7}{1.2 \times 10^4}$
   A) 3.42×10^3
   B) 3.85×10^3
   C) 3.85×10^{11}
   D) 5.544×10^{11}

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15) $(5.32 \times 10^8) - (4.6 \times 10^6)$

    A) 5.336×10^8

    B) 5.274×10^8

    C) 5.274×10^6

    D) 7.2×10^3

16) $(9.67 \times 10^6) + (3.45 \times 10^5)$

    A) 1.312×10^{12}

    B) 1.0015×10^9

    C) 1.0015×10^7

    D) 1.0015×10^5

17) $\dfrac{2.144 \times 10^7}{3.2 \times 10^4}$

    A) 6.7×10^2

    B) 6.7×10^3

    C) 5.344×10^{11}

    D) 6.8608×10^{11}

18) $(7.2 \times 10^7)(1.82 \times 10^2)$

    A) 1.3104×10^9

    B) 9.2×10^9

    C) 1.3104×10^{10}

    D) 1.3104×10^{14}

19) $(9.8 \times 10^5) - (6.7 \times 10^3)$

    A) 3.1×10^2

    B) 9.733×10^3

    C) 9.733×10^5

    D) 9.733×10^7

20) $(2.82 \times 10^9) + (6.3 \times 10^7)$

    A) 1.7766×10^{17}

    B) 9.12×10^{16}

    C) 2.883×10^{11}

    D) 2.883×10^9

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21) **MARS** The diameter of Mars is about 6.8×10^3 kilometers. The diameter of Earth is about 1.2763×10^4 kilometers. About how much greater is Earth's diameter than the diameter of Mars?

    A) 8.67884×10^7 km

    B) 5.963×10^4 km

    C) 5.963×10^3 km

    D) 5.524×10^3 km

22) **WAREHOUSE** A factory builds a new warehouse that is approximately 1.28×10^5 square feet. Later, they add on 1.13×10^3 more square feet for offices. Use scientific notation to write the total size of the new building.

    A) 2.41×10^8 ft^2

    B) 1.2913×10^5 ft^2

    C) 1.2913×10^4 ft^2

    D) 1.2913×10^3 ft^2

23) Which of the following is equivalent to $(-3)^{-3}$?

    A) -9

    B) $\dfrac{1}{-27}$

    C) $\dfrac{1}{27}$

    D) 9

24) What is the simplified form of the expression $(3x^4)^3$?

    A) $9x^7$

    B) $9x^{12}$

    C) $27x^7$

    D) $27x^{12}$

Simplify. Express using exponents.

25) $\dfrac{15m^3n^2}{3mn}$

    A) $\dfrac{15m^2n}{3}$

    B) $\dfrac{m^2n}{5}$

    C) $5m^2n^2$

    D) $5m^2n$

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Simplify. Express using exponents.

26) $(-4b^6)(-b^2c^3)$

    A) $4b^{12}c^3$

    B) $4b^8c^3$

    C) $4b^4c^3$

    D) $-4b^8c^3$

27) The area of a rectangle is $30m^{11}$ square feet. If the length of the rectangle is $6m^4$ feet, what is the width of the rectangle?

Indicate the answer choice that best completes the statement or answers the question.

Simplify. Express using positive exponents.

28) $\dfrac{k^{-4}}{k^{-6}}$

    A) k^2

    B) k^{24}

    C) $\dfrac{1}{k^2}$

    D) $\dfrac{1}{k^{10}}$

29) $n^{-2} \cdot n^{-3}$

    A) $\dfrac{1}{n^5}$

    B) n

    C) n^5

    D) n^6

30) Simplify.

$$\dfrac{abc^8}{(a^{-5}b^3c^{-2})^{-4}}$$