ASTS PREPARATION

MATHEMATICS

Multiple Choice

1. Calculate: 350×0.1
   A. 35
   B. 3.5
   C. 3500
   D. 0.23

2. Calculate: 94×0.01
   A. 0.94
   B. 9.4
   C. 940
   D. 94.01

3. A factory produces 250 kilograms of plastic. A new process reduces the weight of the plastic by a factor of 0.1. What is the new weight of the plastic?
   A. $2.5\ kg$
   B. $25\ kg$
   C. $2500\ kg$
   D. $25000\ kg$

4. Work out: $43 \div 0.01$
   A. 0.43
   B. 4.3
   C. 430
   D. 4300

5. A piece of rope is 4.5 metres long. If you divide it into pieces that are each 0.01 metres long, how many pieces will you have?
   A. 4.5
   B. 450
   C. $4\ 500$
   D. $45\ 000$

6. Round 8647 to **2 significant figures.**
   A. 86
   B. $8\ 600$
   C. $8\ 700$
   D. $8\ 650$

7. A scientist measures the mass of a small object as 0.02071 grams. Round this measurement to **3 significant figures**.

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A. 0.021
B. 0.0207
C. 0.02071
D. 0.02

8. Round the number 995.8 to **1 significant figures.**
   A. 100
   B. 900
   C. 990
   D. 1000

9. The population of a city is 1 235 468. What is the population rounded to **4 significant figures?**
   A. 1 235 000
   B. 1 236 000
   C. 1 235 500
   D. 1 235 470

10. What is the first significant digit in the number 0.00508?
   A. 0
   B. 5
   C. 8
   D. 508

11. Which inequality correctly compares the following numbers $\frac{2}{3}$ and 0.67?
   A. $\frac{2}{3} > 0.67$
   B. $\frac{2}{3} < 0.67$
   C. $\frac{2}{3} = 0.67$
   D. $\frac{2}{3} \neq 0.67$

12. Which of the following fractions will produce a recurring decimal?
   A. $\frac{1}{2}$
   B. $\frac{3}{4}$
   C. $\frac{5}{8}$
   D. $\frac{1}{6}$

13. A recipe requires $\frac{3}{8}$ of a cup of sugar. Which decimal is equivalent to this fraction?
   A. 0.375
   B. 0.38
   C. 0.3
   D. 0.83

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14. Which inequality correctly compares the following numbers $\frac{1}{5}$ and 0.02?
    A. $\frac{1}{5} > 0.02$
    B. $\frac{1}{5} < 0.02$
    C. $\frac{1}{5} = 0.02$
    D. $\frac{1}{5} \neq 0.02$

15. A student claims that 0.4 is a recurring decimal. Is this correct?
    A. Yes, because it can be written as $0.444\ldots$
    B. No, because it is a terminating decimal
    C. Yes, because it is equal to $\frac{2}{5}$
    D. No, because it can be written as $\frac{4}{10}$

ESAY

16. Which symbol, × or ÷, goes in each box?
    a. $8.3 \square 0.1 = 83$

    b. $420 \square 0.01 = 4.2$

    c. $0.75 \square 0.01 = 0.075$

17. Insert the correct inequality symbol (< , >, or =) between each pair of numbers
    a. $\frac{3}{5} \square 0.62$

    b. $0.7 \square \frac{7}{10}$

    c. $\frac{1}{3} \square 0.33$

18. A car's top speed is 185 km/h. A scooter's top speed is 0.1 of the car's top speed. A bicycle's top speed is 0.1 of the scooter's top speed. Calculate the top speed of the bicycle!

    _____

19. Order the following numbers from smallest to largest.

5.6	$\frac{5}{6}$	0.56	$\frac{5}{10}$

....
(smallest) (largest)

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20. Write the decimal equivalent for each of the following fractions.

a. $\frac{1}{9} = \ldots\ldots\ldots$

b. $\frac{3}{20} = \ldots\ldots\ldots$

c. $\frac{5}{11} = \ldots\ldots$

21. A school has a population of 2587 students. The school reports its population rounded to 2 significant figures. What number do they report?

_____

22. Complete the table rounding each number.

Number	Rounded to 1 s.f	Rounded to 2 s.f
537.4		
0.00891		
24.53		

23. Write the fraction that is equivalent to each decimal.

a. 0.4 _____

b. 0.15 _____

24. A company's annual profit last year was $1 480 000. This year, the profit is 0.1 times the profit from last year. What is the profit this year?

_____

25. A number is rounded to 2 significant figures and the result is 8.4.

a. What is the smallest possible value of the original number?

_____

b. What is the largest possible value of the original number?

_____

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