

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**.

- 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. $\frac{2}{3}$
 - C. $\frac{4}{5}$
 - 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

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 ...
- 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, $\times$ or $\div$, 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	$\frac{5}{10}$
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.....
(smallest)

.....
(largest)

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

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

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

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

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?
