American University of Technology
Powered by Arizona State University®

Entrance exam sample test for bachelor's programs: Business Administration, Business and Technology, Tourism, Psychology, Marketing & Communication, Logistics & Supply Chain Management, International Relations & Diplomacy, Finance & FinTech.

Intermediate level

Section 1: (10 Questions — 2 Points Each)

1. Solve for x: $3x - 5 = 10$
   A) 3 B) 5 C) -5 D) $\frac{5}{3}$
2. What is the value of $\frac{1\times2\times3\times4\times5\times6}{1+2+3+4+5+6}$?
   A) $34\frac{1}{7}$ B) $34\frac{3}{7}$ C) $34\frac{2}{7}$ D) $35\frac{1}{7}$
3. Find the area of a rectangle with length $18\ cm$ and width $14\ cm$.
   A) 256 cm^2 B) 262 cm^2 C) 252 cm^2 D) 208 cm^2
4. Simplify: $5(x + 2) - 3(x - 4)$
   A) $2x + 22$ B) $2x - 2$ C) $2x + 2$ D) $8x + 22$
5. Which of these is a prime number?
   A) 111 B) 143 C) 149 D) 221
6. Convert 0.75 into a fraction in simplest form.
   A) $\frac{1}{2}$ B) $\frac{3}{4}$ C) $\frac{7}{5}$ D) $\frac{75}{10}$
7. What is the square root of 144?
   A) 11 B) 12 C) 14 D) 16

8. The sum of angles in a triangle is always:

   A) 90° B) 180° C) 270° D) 360°

9. What is 15% of 200?

10. Find the median of the data set: $2, 5, 8, 10, 12$.

Section 2: (10 Questions — 3 Points Each)

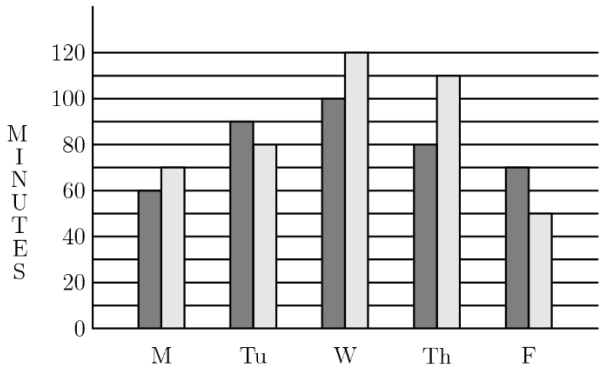
11. Factorize the expression: $x^3 - 2x^2 - 9x + 18$

    A) $(x-2)(x^2-9)$ B) $(x-2)(x-3)(x+3)$
    C) $(x+2)(x-3)(x+3)$ D) $(x-2)(x+9)$

12. Solve the inequality : $-2x + 4 < 12$

    A) $x < -4$ B) $x > 4$ C) $x > -4$ D) $x < 4$

13. The graph shows the number of minutes studied by both Asha (black bar) and Sasha (grey bar) in one week. On the average, how many more minutes per day did Sasha study than Asha?



    A) 6 B) 8 C) 9 D) 12

14. A small coffee shop spends $50 a day on rent and equipment. It costs them $1.50 to make one cup of coffee. If they sell each cup for $4.00, how many cups of coffee must they sell in one day to make a total profit of exactly $100?

    A) 40 B) 50 C) 60 D) 75

15. What is the Greatest Common Factor of 144 and 216?

A) 12 B) 36 C) 72 D) 144

16. Which point lies on the line $y = 2x + 1$?

A) $(1, 2)$ B) $(-2, -5)$ C) $(2, 3)$ D) $(-3, -5)$

17. A shop gives a 20% discount on a $\$150$ coat. What is the final price?

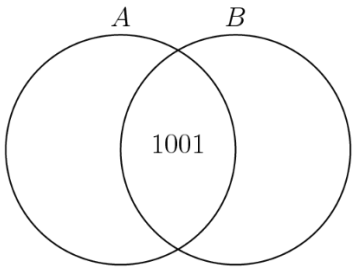
A) $\$130$ B) $\$120$ C) $\$140$ D) $\$110$

18. How many three-digit numbers have all distinct digits?

A) 648 B) 720 C) 504 D) 576

19. The average age of 5 people in a room is 30 years. An 18-year-old person leaves the room. What is the average age of the four remaining people?

20. Sets A and B, shown in the venn diagram, have the same number of elements. Their union has 2007 elements and their intersection has 1001 elements. Find the number of elements in A.



Section 3: (10 Questions — 5 Points Each)

21. Solve the quadratic equation for x: $2x^2 - 11x + 12 = 0$

Answer: _____

22. Calculate the distance between the points $(11, -4)$ and $(5, 4)$ using the distance formula.

Answer: _____

23. If $f(x) = 3x^2 - 5$, find the exact value of $f(-2)$.

Answer: _____

24. In a circle, a chord of 8 cm is exactly 3 cm away from the center. Find the radius of the circle.

Answer: _____

25. How many possible subsets (it should contain at least 1 element) can be formed from a set containing 4 elements?

Answer: _____

26. The ratio of the areas of two similar triangles is 16:25. What is the ratio of their corresponding sides?

Answer: _____

27. A box contains 5 red, 3 blue, and 2 green pens. If you pick one pen at random, what is the probability (expressed as a fraction or percentage) that it is NOT red?

Answer: _____

28. A startup company produces 120 smartwatches in its first month. They plan to expand their business by increasing production by exactly 15 watches each month. In which month will they produce exactly 300 watches?

Answer: _____

29. A company is purchasing a total of 120 tons of materials, consisting of steel and specialized concrete. Steel costs $800 per ton, and the concrete costs $150 per ton. If the total invoice for these materials is exactly $50,500, how many tons of steel and how many tons of concrete did the company buy?

Answer: _____

30. In an arithmetic sequence, the first term $a_1 = 7$ and the common difference $d = 4$. If the last term of the sequence is 103, how many terms are there in this sequence?

Answer: _____