

## XPERT Mathematics Competition – Sample Exam for Grade 5 and 6

**1) Is the number 315 divisible by both 3 and 5?**

- A) Yes, divisible by both
- B) No divisible 3 or 5
- C) Only by 3
- D) Only by 5

**2) If all squares are rectangles but not all rectangles are squares, is the following statement true? "All rectangles are squares."**

- A) True
- B) False
- C) Sometimes true
- D) Cannot be determined

**3) Which of the following is a prime number?**

- A) 21
- B) 23
- C) 27
- D) 30

**4) What is  $12,45 + 8,6 - 3,75$ ?**

- A) 17.3
- B) 18.65
- C) 21.05
- D) 22.3

**5) Convert  $7\frac{3}{4}$  to an improper fraction.**

- A)  $\frac{31}{4}$
- B)  $\frac{29}{4}$
- C)  $\frac{28}{4}$
- D)  $\frac{27}{4}$

**6) What is the greatest common factor (GCF) of 36 and 60?**

- A) 6
- B) 12
- C) 18
- D) 24

**7) The least common multiple (LCM) of 8 and 12 is:**

- A) 24
- B) 36
- C) 48
- D) 96

**8) Which number is divisible by 13?**

- A) 234
- B) 273
- C) 299
- D) 315

**9) What is the prime factorization of 84?**

- A)  $2^2 \times 3 \times 7$
- B)  $2 \times 3 \times 7$
- C)  $2^3 \times 7$
- D)  $3^2 \times 7$

**10) Solve  $4\frac{1}{3} - 2\frac{2}{3}$ .**

- A)  $1\frac{2}{3}$
- B)  $1\frac{1}{3}$
- C)  $2\frac{1}{3}$
- D)  $3\frac{1}{3}$

**11) What is the mean of the numbers 5, 8, 12, 15, and 20?**

- A) 10
- B) 12
- C) 13
- D) 14

**12) 25% of 240 is:**

- A) 50
- B) 60
- C) 75
- D) 80

**13) The ratio of boys to girls in a class is 3:4. If there are 28 students in the class, how many are girls?**

- A) 12
- B) 14
- C) 16
- D) 18

**14) Solve for x if  $3x + 5 = 20$ .**

- A) 3
- B) 4
- C) 5
- D) 6

**15) The side length of a square is 6 cm. What is its perimeter?**

- A) 24 cm
- B) 18 cm
- C) 36 cm
- D) 12 cm

**16) Find the median of the numbers 3, 7, 9, 12, and 15.**

- A) 7
- B) 9
- C) 12
- D) 15

**17) A book was originally priced at \$20 but is now sold for \$25. What is the percentage increase?**

- A) 20%
- B) 25%
- C) 30%
- D) 35%

**18) Which ratio is equivalent to 5:8?**

- A) 10:16
- B) 8:5
- C) 15:24
- D) Both a and c

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19) A number is doubled and then decreased by 8 to result in 12. What is the number?

- A) 10
- B) 12
- C) 8
- D) 6

20) A rectangle has a length of 10 cm and a width of 7 cm. What is its perimeter?

- A) 34 cm
- B) 30 cm
- C) 28 cm
- D) 17 cm

21) A triangle has a base of 8 cm and a height of 5 cm. What is its area?

- A)  $20 \text{ cm}^2$
- B)  $30 \text{ cm}^2$
- C)  $40 \text{ cm}^2$
- D)  $50 \text{ cm}^2$

22) Which statement is true about parallelograms?

- A) Opposite sides are equal
- B) All angles are  $90^\circ$
- C) Diagonals are always equal
- D) Opposite sides are not parallel

23) An angle measuring  $125^\circ$  is:

- A) Acute
- B) Right
- C) Obtuse
- D) Straight

24) If the side of a cube is 4 cm, its volume is:

- A)  $64 \text{ cm}^3$
- B)  $16 \text{ cm}^3$
- C)  $48 \text{ cm}^3$
- D)  $32 \text{ cm}^3$

25) How many lines of symmetry does a regular hexagon have?

- A) 3
- B) 6
- C) 4
- D) 8

26) A square has a side length of 9 cm. What is its area?

- A)  $18 \text{ cm}^2$
- B)  $27 \text{ cm}^2$
- C)  $81 \text{ cm}^2$
- D)  $72 \text{ cm}^2$

27) Which of the following is true for rectangles?

- A) All sides are equal
- B) Opposite sides are equal, and all angles are  $90^\circ$
- C) Opposite sides are equal, but angles vary
- D) Only one pair of sides is parallel

28) What is the sum of the interior angles of a triangle?

- A)  $90^\circ$
- B)  $180^\circ$
- C)  $360^\circ$
- D)  $270^\circ$

29) A cuboid has dimensions of 4 cm, 5 cm, and 6 cm. What is its volume?

- A)  $60 \text{ cm}^3$
- B)  $120 \text{ cm}^3$
- C)  $100 \text{ cm}^3$
- D)  $240 \text{ cm}^3$

30) How many lines of symmetry does a rectangle have?

- A) 2
- B) 4
- C) 6
- D) None