

Mathematics Practice Test (Set B)

Instructions: Choose the BEST answer for each of the following 40 questions. Use only the answer choices provided (A–E). All answers are on the last page.

- Evaluate $(7 + 3/4) \div (2 + 5/8)$.
A. $62/21$ B. $31/21$ C. $21/62$ D. $2\ 5/8$ E. 3
- What digit A makes $48A2$ divisible by 9?
A. 1 B. 2 C. 3 D. 4 E. 5
- Find the sum: $0.407 + 0.0407 + 0.00407$.
A. 0.45170 B. 0.45177 C. 0.45717 D. 0.45077 E. 0.45100
- How much is $(1/400)$ of 35%?
A. 0.00875% B. 0.0875% C. 0.875% D. 0.35% E. 3.5%
- Which of the following has the largest value?
A. $13/18$ B. $7/10$ C. $11/15$ D. $3/4$ E. $5/7$
- What percent of 56 is 98?
A. 150% B. 160% C. 170% D. 175% E. 180%
- Calculate the value of $\sqrt{21 \cdot 28 \cdot 12}$.
A. 72 B. 80 C. 82 D. 84 E. 90
- The reciprocal of $(5/6 + 6/5)$ is:
A. $6/11$ B. $11/6$ C. $30/61$ D. $61/30$ E. $25/61$
- Calculate $2/5 + 1/18$ to the nearest hundredth.
A. 0.45 B. 0.46 C. 0.47 D. 0.48 E. 0.49
- If 1.5% of a number is 12, what is the number?
A. 600 B. 700 C. 750 D. 800 E. 900
- Find the smallest whole number larger than $4\ 1/2 + 3\ 2/3 + 2\ 3/4$.
A. 10 B. 11 C. 12 D. 13 E. 14
- In what range does $\sqrt{10^2 + 11^2}$ occur?

A. <14 B. 14 to 15 C. 15 to 16 D. 16 to 17 E. >17

13. Evaluate $|4 - (-2)^2 - (-2)^4|$.

A. 0 B. 4 C. 8 D. 16 E. 20

14. If $A \# B = 2A + B^2$, then $1 \# ((2 \# 1) \# 2)$ equals:

A. 190 B. 194 C. 198 D. 202 E. 210

15. What is the area, in cm^2 , of the smallest square that will contain a circle of radius 6 cm?

A. 36 B. 72 C. 96 D. 120 E. 144

16. When a book is opened, two facing pages have numbers that sum to 431. What is the number of the next page?

A. 215 B. 216 C. 217 D. 218 E. 219

17. A factory runs nonstop for three 10-hour shifts. The first shift starts at 7:45 AM. At what time does the third shift end?

A. 1:45 PM same day B. 7:45 PM same day C. 1:45 AM next day D. 1:45 PM next day

E. 7:45 PM next day

18. A store buys oranges at 5 for \$2 and sells them at 3 for \$2.40. How many must be sold to make a profit of \$48?

A. 100 B. 110 C. 120 D. 150 E. 160

19. In a league, a win counts for 2 points and a tie for 1 point. After 12 games (7 wins, 3 losses, 2 ties), how many points will the team have after 72 games if it keeps the same pace?

A. 88 B. 92 C. 96 D. 100 E. 104

20. What is the least number of colors needed to paint the faces of a regular octahedron so that no adjacent faces have the same color?

A. 2 B. 3 C. 4 D. 5 E. 6

21. What fraction of 5 hours is 45 seconds?

A. $\frac{1}{200}$ B. $\frac{1}{300}$ C. $\frac{1}{400}$ D. $\frac{1}{800}$ E. $\frac{1}{1200}$

22. Find the numerical value of $1 / (1 + 1 / (2 + 1 / (3 + 1/4)))$.

A. $\frac{17}{29}$ B. $\frac{29}{17}$ C. $\frac{30}{43}$ D. $\frac{43}{30}$ E. $\frac{13}{20}$

23. Estimate the numerical value of $\pi / 61$.

A. <0.045 B. 0.045 to 0.050 C. 0.051 to 0.055 D. 0.056 to 0.060 E. >0.060

24. $1/16$ is the square root of what number?

A. $1/128$ B. $1/196$ C. $1/225$ D. $1/256$ E. $1/512$

25. In a class of 36 students, 14 are boys. If 5 more boys are admitted, what fraction of the class are boys?

A. $14/36$ B. $19/41$ C. $21/41$ D. $19/36$ E. $1/2$

26. An estate of \$4.2 million leaves 20% to charity, \$900,000 to a spouse, and the rest equally to three children. How much does each child receive?

A. \$800,000 B. \$810,000 C. \$820,000 D. \$830,000 E. \$840,000

27. It takes 9 tubes of glue to construct 20 models. How many whole tubes must be purchased to make 35 models?

A. 15 B. 16 C. 17 D. 18 E. 19

28. If April 14 is a Wednesday, what day of the week is May 12 of the same year?

A. Monday B. Tuesday C. Wednesday D. Thursday E. Friday

29. Mixing 3 kg of 20% sugar solution with 1 kg of 5% solution produces a solution with what concentration (nearest tenth of a percent)?

A. 15.8% B. 16.0% C. 16.3% D. 16.5% E. 17.5%

30. A train leaves at 2:15 PM and arrives at 5:45 PM, covering 210 miles. What is its average speed (mph)?

A. 55 B. 58 C. 60 D. 62 E. 65

31. The first four quiz scores average 7.5. The next three scores are 8, 6, and 9. If the eight-quiz average is 7.25, what is the eighth score?

A. 4 B. 5 C. 6 D. 7 E. 8

32. There are 16 cups in a gallon, 16 tablespoons in a cup, and 3 teaspoons in a tablespoon. How many teaspoons are in 2 gallons?

A. 768 B. 1024 C. 1152 D. 1536 E. 2048

33. The product $7.98 * 4.02$ is most nearly equal to:

A. 31 B. 32 C. 33 D. 34 E. 35

34. How many 2-digit multiples of 7 are greater than 30?

A. 8 B. 9 C. 10 D. 11 E. 12

35. Multiplying by $\frac{5}{8}$ and then dividing by $\frac{2}{3}$ is the same as dividing by what single fraction?

A. $\frac{15}{16}$ B. $\frac{16}{15}$ C. $\frac{5}{12}$ D. $\frac{12}{5}$ E. $\frac{8}{15}$

36. What is the least common multiple (LCM) of 24 and 54?

A. 108 B. 144 C. 162 D. 216 E. 324

37. Successive discounts of 20% and 30% are equal to what single discount (nearest whole percent)?

A. 44% B. 45% C. 46% D. 48% E. 50%

38. A deli offers 7 toppings. How many distinct 3-topping sandwiches are possible?

A. 21 B. 28 C. 35 D. 42 E. 49

39. Five students eat 8 doughnuts in 10 minutes. At this rate, how many doughnuts will 12 students eat in 15 minutes? (nearest whole number)

A. 28 B. 29 C. 30 D. 31 E. 32

40. In the next 4 days, 4200 people will move to New Jersey. On average, how many people will move each hour? (nearest whole number)

A. 42 B. 43 C. 44 D. 45 E. 46

Answer Key (Set B)

1. A (62/21)

2. D (4)

3. B (0.45177)

4. B (0.0875%)

5. D (3/4)

6. D (175%)

7. D (84)

8. C (30/61)

9. B (0.46)

10. D (800)

11. B (11)

12. B (14 to 15)

13. D (16)

14. C (198)

15. E (144)

16. C (217)

17. D (1:45 PM next day)

18. C (120)

19. C (96)

20. A (2)

21. C (1/400)

22. C (30/43)

23. C (0.051 to 0.055)

24. D (1/256)

25. B (19/41)

26. C (\$820,000)

27. B (16)

28. C (Wednesday)

29. C (16.3%)

30. C (60)

31. B (5)

32. D (1536)

33. B (32)

34. C (10)

35. B (16/15)

36. D (216)

37. A (44%)

38. C (35)

39. B (29)

40. C (44)