

MAT 0012 Pre-Algebra
Final Review

1. Select the place value of the underlined digit in 167.342.

- [a] ten-thousandth
- [b] hundredths
- [c] thousandths
- [d] tenths

2. Which is the percent notation of 0.0325?

- [a] 0.325%
- [b] 3.25%
- [c] 32.5%
- [d] 0.000325%

3. Select the symbol which makes -9 _____ -5 a true statement.

- [a] $<$
- [b] $=$
- [c] $>$
- [d] none of these

4. Evaluate: $6^2 - 5 + 3$

- [a] 34
- [b] 28
- [c] 44
- [d] 10

5. In the metric system, kilo stands for:

- [a] $\frac{1}{100}$
- [b] 10
- [c] 100
- [d] 1000

6. It would take Acme Paint Company 72 days to paint an entire building. It would take J.B. Company 24 days less to paint the same building. How long would it take J.B. Company to paint the building?

[a] 96 days

[b] 3 days

[c] 48 days

[d] 24 days

7. Which geometric figure has three sides, two equal angles, *and* two equal sides?

[a] right triangle

[b] scalene triangle

[c] isosceles triangle

[d] equilateral triangle

8. Solve: $3x + 5 = 7x - 7$

[a] -3

[b] 3

[c] $\frac{1}{5}$

[d] $\frac{5}{6}$

9. The formula for the area of a square is $A = s^2$, where A is the area and s is the length of the side. Find the area of a square 8 inches on a side.

[a] 32 in

[b] 64 in^2

[c] 32 in^2

[d] 64 in

10. Perform the indicated operations: $\frac{9}{17} - \frac{2}{17} + \frac{8}{17}$

[a] $\frac{19}{17}$

[b] $-\frac{1}{17}$

[c] $\frac{13}{17}$

[d] $\frac{15}{17}$

11. Reduce this fraction to lowest terms: $\frac{184}{16}$

[a] $\frac{11}{14}$

[b] $\frac{92}{8}$

[c] $\frac{23}{2}$

[d] $\frac{23}{4}$

12. Evaluate: $3\frac{5}{8} - \frac{3}{4}$

[a] $3\frac{7}{8}$

[b] $2\frac{3}{4}$

[c] $2\frac{7}{8}$

[d] $2\frac{3}{8}$

13. Evaluate: $3\frac{3}{8} \times 2\frac{2}{3}$

[a] $6\frac{5}{24}$

[b] $1\frac{17}{64}$

[c] 9

[d] $5\frac{5}{24}$

14. A family won \$750,000 in the lottery. Each family member received \$93,750. How many members are there in the family?

[a] 6

[b] 12

[c] 10

[d] 8

15. Evaluate: $-8 - (-8) - 40 - (-20)$

[a] -76

[b] -60

[c] 44

[d] -20

16. Evaluate: $-\frac{2}{15} + \left(-\frac{7}{3}\right)$

[a] $-\frac{1}{2}$

[b] $-\frac{37}{15}$

[c] $\frac{1}{2}$

[d] $-\frac{9}{15}$

17. Perform the indicated operation: $\frac{3}{4} + \frac{1}{3} + \frac{7}{8}$

[a] $1\frac{23}{24}$

[b] $\frac{11}{20}$

[c] $\frac{11}{15}$

[d] $\frac{1}{2}$

18. Solve: $2(x+3) = x-12$

[a] -15

[b] -18

[c] 5

[d] -5

19. Perform the indicated operations: $\frac{2}{3} \div \frac{4}{9} - \frac{1}{2} \cdot \frac{4}{2}$

[a] $-\frac{19}{27}$

[b] $\frac{6}{5}$

[c] -3

[d] $\frac{1}{2}$

20. Evaluate: $10\frac{2}{3} \div 2\frac{5}{6}$

[a] $3\frac{13}{17}$

[b] $40\frac{8}{9}$

[c] $5\frac{4}{5}$

[d] $5\frac{5}{9}$

21. Diane drove for $2\frac{1}{2}$ hours at a rate of 60.5 miles per hour. How far did she drive?

[a] 30 miles

[b] 63 miles

[c] 151.25 miles

[d] 24.2 miles

22. Solve: $7x - 3 = 2x + 12$

[a] $\frac{9}{5}$

[b] -3

[c] 3

[d] 1

23. Solve: $\frac{x}{3} = 12$

[a] 24

[b] $-\frac{5}{3}$

[c] 4

[d] 36

24. Change 35% to a simplified fraction.

[a] $\frac{7}{2}$

[b] $\frac{7}{20}$

[c] $\frac{3500}{1}$

[d] $\frac{7}{200}$

25. Exercising burns up 250 calories per hour. How many calories will be burned up if a person exercises for 3 hours?

[a] 500

[b] 750

[c] 1000

[d] 1250

26. An alloy is made of 31% copper, 8% iron ore, 58% lead, and 3% silver. How many pounds of iron ore are needed to make 1800 pounds of alloy?

[a] 14,400

[b] 84

[c] 560

[d] 144

27. Round off 17.039 to the tenths place.

[a] 17.01

[b] 17.04

[c] 17.0

[d] 17.1

28. Solve: $x - 10 = 75$

[a] 7.5

[b] 65

[c] 750

[d] 85

29. Evaluate: $120 \div 8 + 7 + 3 \times 5$

[a] 55

[b] 37

[c] 23

[d] 125

30. Evaluate: $19 - (-7) + 14 - 31$

[a] -5

[b] 19

[c] 9

[d] 5

31. Evaluate: $\frac{5/8}{15/2}$

[a] $\frac{75}{16}$

[b] $\frac{1}{12}$

[c] $\frac{15}{16}$

[d] $\frac{3}{4}$

32. Twenty students passed a math test. If this was 80% of all the students in the class, how many students are in the class?

[a] 15

[b] 24

[c] 25

[d] 16

33. Simplify: $7x - 3(x + 7)$

[a] $10x - 21$

[b] $-17x$

[c] $4x + 21$

[d] $4x - 21$

34. Solve: $-2(x + 1) = 3(2x + 4)$

[a] $-\frac{7}{4}$

[b] $-\frac{3}{8}$

[c] $-\frac{3}{4}$

[d] 0

35. Convert $\frac{7}{2}$ to a percent.

[a] 35%

[b] 0.35%

[c] 3.5%

[d] 350%

36. 17 is what percent of 85?

[a] 20%

[b] 25%

[c] 5%

[d] 500%

37. The formula for the perimeter of a triangle is $P = a + b + c$, where a , b , c are the sides of the triangle. The sides of a triangle are 38, 57 and 79 yards in length. How many yards is the perimeter of the triangle?

[a] 216 yards

[b] 174 yards

[c] 412 yards

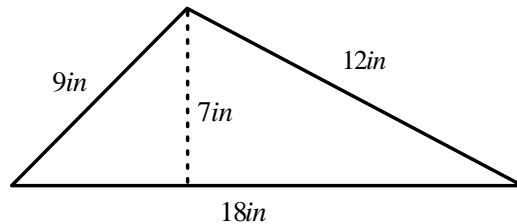
[d] 522 yards

38. If an automobile travels 126 miles in 3 hours, how many hours will it take to go 441 miles at the same rate of speed?

- [a] 7
- [b] $10\frac{1}{2}$
- [c] 12
- [d] $11\frac{2}{3}$

39. The formula for the area of a triangle is $A = \frac{1}{2}bh$, where b is the base and h is the height. What is the area of the triangle?

- [a] 108 *sq.in.*
- [b] 81 *sq.in.*
- [c] 63 *sq.in.*
- [d] 126 *sq.in.*



40. If 36 inches = 1 yard, then 96 inches =

- [a] $2\frac{2}{3}$ yards
- [b] 3 yards
- [c] 2 yards
- [d] 38 yards

41. What is the least common multiple of 24 and 40?

- [a] 120
- [b] 960
- [c] 8
- [d] 40

42. George has \$15,000 in his bank account. He spends $\frac{2}{3}$ of it on a new boat. What was the cost of the boat?

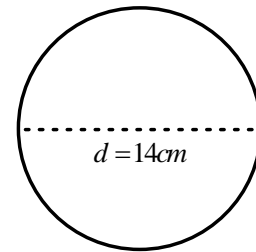
- [a] \$22,500
- [b] \$10,000
- [c] \$5,000
- [d] \$30,000

43. Mary bought a car for \$18,500. She is to make 60 monthly payments. How much does she pay each month?

- [a] \$30.83
- [b] \$308.33
- [c] \$3,700
- [d] \$370.00

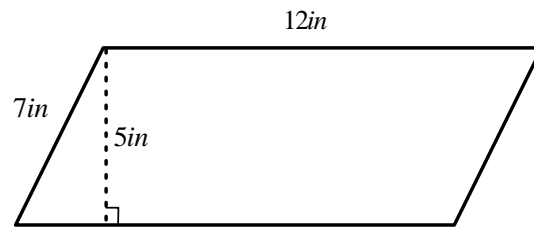
44. The formula for the area of a circle is $A = \pi r^2$, where r is the radius. Find the area of the figure below. Use 3.14 to represent π .

- [a] $43.96cm^2$
- [b] $615.44cm^2$
- [c] $153.86cm^2$
- [d] $21.98cm^2$



45. The formula for the area of a parallelogram is $A = bh$, where b is the base and h is the height. Find the area of the parallelogram below.

- [a] $32in^2$
- [b] $38in^2$
- [c] $84in^2$
- [d] $60in^2$



46. In 1997 Sharon's salary was \$24,000. In 1998 her salary was \$27,000. What was the percent of increase from 1997 to 1998?

- [a] 12.5%
- [b] 11.1%
- [c] 88.8%
- [d] 3%

47. Evaluate $c^2 - a^2$ for $c = 10$ and $a = 8$.

- [a] 2
- [b] 4
- [c] 18
- [d] 36

48. If 8 eggs are required to make 40 pancakes, how many eggs are needed to make 260 pancakes?

- [a] 52
- [b] 60
- [c] 32
- [d] 228

49. The formula for the perimeter of a rectangle is $P = 2l + 2w$, where l is the length and w is the width. If the perimeter of a rectangle is 92 meters and the length is 28 meters, what is the width of this rectangle?

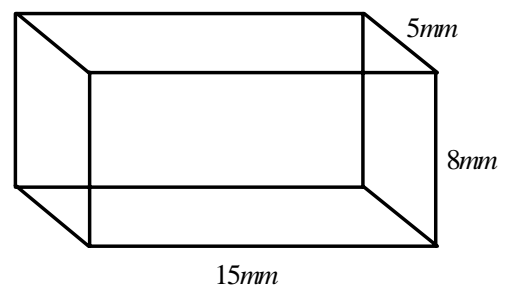
- [a] 64 meters
- [b] 18 meters
- [c] 36 meters
- [d] 32 meters

50. Simplify: $5\{65 - 5[16 - (8 - 17)]\}$

- [a] 150
- [b] 7500
- [c] -300
- [d] 2020

51. The volume of a rectangular solid is found by multiplying the length times the width times the height. Find the volume of the figure below.

- [a] $600mm^3$
- [b] $28mm^2$
- [c] $28mm^3$
- [d] $600mm^2$



52. The times recorded for the members of the ASU 400 meter relay team were 10.5sec, 11.2sec, and 10.3sec. What was the combined time for the event?

- [a] 32sec
- [b] 11.4sec
- [c] 52.0sec
- [d] 520sec

53. Billy needs 8 art posters for an art project. If each board costs \$1.36 each, how much will these supplies cost?

[a] \$10.88

[b] \$9.36

[c] \$6.64

[d] \$0.17

54. The Smiths owe \$3039.68 on their automobile. If their monthly notes are \$217.12, how many notes do they have remaining?

[a] 11

[b] 12

[c] 14

[d] 13

55. Find the circumference of a circle with a radius of 10 inches. The formula for the circumference of a circle is $C = \pi d$, where π is 3.14 and d is the diameter.

[a] 31.40in

[b] 31.40in²

[c] 62.80in

[d] 62.80in²

56. Evaluate $a - b + c$ if $a = -11$, $b = 1$, and $c = -5$.

[a] -5

[b] -17

[c] -15

[d] -7

57. Evaluate $\frac{mn}{m+n}$ when $m = 5$ and $n = 13$.

[a] $\frac{35}{9}$

[b] $\frac{513}{18}$

[c] $\frac{65}{18}$

[d] 1

58. Simplify: $(2x + 3y) + (7x + 5y)$

[a] $-5x + 8y$

[b] $9x + 8y$

[c] $9x - 2y$

[d] $-5x - 2y$

59. Simplify: $(3x + 4y) + (8x + 5y)$

[a] $-5x - y$

[b] $11x + 9y$

[c] $-5x + 9y$

[d] $11x - y$

60. Solve: $-\frac{x}{5} = -20$

[a] -4

[b] 100

[c] -100

[d] 4

61. Solve: $3x + 8 = x + 1$

[a] $\frac{2}{7}$

[b] $\frac{7}{2}$

[c] $-\frac{7}{2}$

[d] $-\frac{2}{7}$

62. Solve: $7 = 10(x + 5) - 8x$

[a] $-21\frac{1}{2}$

[b] 1

[c] -1

[d] $21\frac{1}{2}$

63. Solve: $\frac{x}{2} + \frac{x}{9} = 5$

[a] $\frac{90}{11}$

[b] $\frac{11}{90}$

[c] $\frac{76}{13}$

[d] $\frac{13}{76}$

ANSWER KEY

- | | | |
|-------|-------|-------|
| 1. c | 22. c | 43. b |
| 2. b | 23. d | 44. c |
| 3. a | 24. b | 45. d |
| 4. a | 25. b | 46. a |
| 5. d | 26. d | 47. d |
| 6. c | 27. c | 48. a |
| 7. c | 28. d | 49. b |
| 8. b | 29. b | 50. c |
| 9. b | 30. c | 51. a |
| 10. d | 31. b | 52. a |
| 11. c | 32. c | 53. a |
| 12. c | 33. d | 54. c |
| 13. c | 34. a | 55. c |
| 14. d | 35. d | 56. b |
| 15. d | 36. a | 57. c |
| 16. b | 37. b | 58. b |
| 17. a | 38. b | 59. b |
| 18. b | 39. c | 60. b |
| 19. d | 40. a | 61. c |
| 20. a | 41. a | 62. a |
| 21. c | 42. b | 63. a |