

12A Common Final Practice Problems

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Simplify the expression.

1) $7 \cdot 6 - 9$

1) _____

2) $[21 - (4 + 6) \div 2] - [1 + 12 \div 3]$

2) _____

3) $(3 - 2)(2 + 4) - 4^2$

3) _____

4) $-1.9 + [0.5 + (-0.2) + 0.4]$

4) _____

5) $7a - 4a + 3$

5) _____

6) $7a - 2a + a - 9$

6) _____

7) $2z - 8z + z$

7) _____

8) $6x - 3 + 3x - x + 6$

8) _____

9) $8x^2 - 2x - 6 + 9x + 9 + 8x^2$

9) _____

10) $2(9n - 10)$

10) _____

11) $-9(6r + 5) + 6(3r + 6)$

11) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Simplify the expression.

12) $9^2 - 2 \cdot 5$

12) _____

A) 71

B) 315

C) 395

D) 245

13) $(2 + 4)[2 + (6 + 4)]$

13) _____

A) 208

B) 26

C) 96

D) 72

14) $12 + (-19) - (-20) - 13 + 20$

14) _____

A) 20

B) 46

C) 4

D) 6

15) $[19 - (-10)] - [20 + (-16)]$

15) _____

A) 25

B) -45

C) 7

D) 45

- 16) $\frac{7(2) + 5}{3 - 8(3)}$ 16) _____
 A) $\frac{19}{21}$ B) $-\frac{19}{15}$ C) $-\frac{7}{3}$ D) $-\frac{19}{21}$
- 17) $[5 + (-15)] + [24 + (-23)]$ 17) _____
 A) -9 B) 67 C) -57 D) -11
- 18) $7[6 + 2(3 + 2)]$ 18) _____
 A) 280 B) 276 C) 52 D) 112
- 19) $5.1w - 1.4 - 3.6w + 5 + 2.8w$ 19) _____
 A) $4.3w + 3.6$ B) $11.5w + 3.6$ C) $4.3w - 3.6$ D) $4.3w + 6.4$
- 20) $-8(r + 4)$ 20) _____
 A) $r - 32$ B) $-8r - 4$ C) $-8r - 32$ D) $-8r + 32$
- 21) $-3(2x - 7) - 4x + 5$ 21) _____
 A) $2x + 26$ B) $-10x + 26$ C) $10x + 26$ D) $-10x - 16$

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Evaluate the expression for the given replacement values.

- 22) $\frac{7x - 5y}{x + 11}$ $x = 8, y = 9$ 22) _____
- 23) $(x + 2y)^2$ $x = 2, y = 4$ 23) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

If $x = -4$ and $y = -2$, evaluate the expression.

- 24) $2x + 7y$ 24) _____
 A) -32 B) -22 C) 0 D) 6
- 25) $x^4 + 4y$ 25) _____
 A) -16 B) -24 C) 248 D) 240
- 26) $\frac{10 - 5x}{y + 2}$ 26) _____
 A) 0 B) $\frac{5}{2}$ C) $-\frac{15}{2}$ D) undefined

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the equation.

- 27) $\frac{1}{4}a - \frac{1}{4} = -4$ 27) _____

28) $\frac{1}{5}(x + 6) = \frac{1}{6}(x + 8)$

28) _____

29) $3(4x - 1) = 12$

29) _____

30) $4(2z - 3) = 7(z - 2)$

30) _____

31) $7x - 3 + 6x - 6 = 5x + 8x - 12$

31) _____

32) $-8x + 1 + 3x + 9 = 13$

32) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

33) $9x + 9x + 2 = 2x$

33) _____

A) $\frac{1}{8}$

B) 8

C) $\frac{1}{10}$

D) $-\frac{1}{8}$

34) $6x - (3x - 1) = 2$

34) _____

A) $-\frac{1}{9}$

B) $\frac{1}{3}$

C) $-\frac{1}{3}$

D) $\frac{1}{9}$

35) $9n = 7(3n + 2)$

35) _____

A) $\frac{14}{9}$

B) $\frac{6}{7}$

C) $-\frac{7}{6}$

D) $\frac{7}{6}$

36) $\frac{1}{3}x - 4 = 1$

36) _____

A) -9

B) 9

C) -15

D) 15

37) $\frac{3}{8}x + \frac{3}{4} = \frac{1}{4}x$

37) _____

A) -6

B) 8

C) -8

D) 6

38) $0.05(40) + 0.40x = 0.20(40 + x)$

38) _____

A) 15

B) 20

C) 40

D) 30

39) $5(x + 3) - (5x + 15) = 0$

39) _____

A) 3

B) all real numbers

C) 0

D) no solution

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**Substitute the given values into the formula and solve for the unknown variable.**

40) $d = rt$; $t = 7$, $d = 56$

40) _____

41) $P = 2L + 2W$; $P = 28$, $W = 6$

41) _____

42) $A = \frac{1}{2}(B + b)h$; $A = 73.5$, $b = 10$, $B = 11$

42) _____

Solve the formula for the specified variable.

43) $V = \frac{1}{3}Ah$ for h

43) _____

44) $P = 2L + 2W$ for W

44) _____

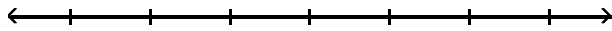
45) $F = \frac{9}{5}C + 32$ for C

45) _____

Solve the inequality. Graph the solution set and write it in interval notation.

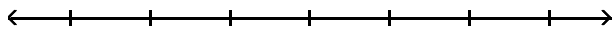
46) $25x - 40 > 5(4x - 5)$

46) _____



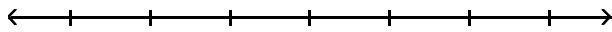
47) $-4(2x - 13) < -12x + 20$

47) _____



48) $4x + 4 - 7x < 8 - 5x + 4$

48) _____



Solve.

49) A car rental agency advertised renting a luxury, full-size car for \$19.95 per day and \$0.19 per mile. If you rent this car for 5 days, how many whole miles can you drive if you only have \$200 to spend.

49) _____

50) A 9-ft. board is cut into 2 pieces so that one piece is 5 feet longer than 3 times the shorter piece. If the shorter piece is x feet long, find the lengths of both pieces.

50) _____

51) The house numbers of two adjacent homes are two consecutive even numbers. If their sum is 334, find the house numbers.

51) _____

52) The volume of a sphere with radius r is given by the formula $V = \frac{4}{3} \pi r^3$. Find the volume of a sphere with radius 2 meters. Use 3.14 for the value of π .

52) _____

Solve. If needed, round money amounts to two decimal places and all other amounts to one decimal place.

53) A store is advertising 35% off sale on everything in the store. Find the sale price of a coat that regularly sells for \$300.

53) _____

Solve the problem.

- 54) A convenience store employee is counting \$10 and \$20 bills. If there are three times as many \$10 bills as \$20 bills and the total amount is \$1300, find the number of each type of bill. 54) _____

Solve.

- 55) If \$38,000 is invested at 10% simple annual interest, how much should be invested at 12% annual simple interest so that the total yearly income from both investments is \$5000? 55) _____
- 56) An archer has \$126 to spend on a new archery set. A certain set containing a bow and three arrows costs \$45. With the purchase of this set, he can purchase additional arrows for \$9 per arrow. Use an inequality to find the maximum number of arrows he could obtain, including those with the set, for his \$126. 56) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 57) A promotional deal for long distance phone service charges a \$15 basic fee plus \$0.05 per minute for all calls. If Joe's phone bill was \$55 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary. 57) _____
A) 800 B) 8 C) 2 D) 1400
- 58) During an intramural basketball game, Team A scored 18 fewer points than Team B. Together, both teams scored a total of 146 points. How many points did Team A score during the game? 58) _____
A) 82 points B) 64 points C) 65 points D) 73 points
- 59) In a recent International Gymnastics competition, the U.S., China, and Romania were the big winners. If the total number of medals won by each team are three consecutive integers whose sum is 90 and the U.S. won more than China who won more than Romania, how many medals did each team win? 59) _____
A) U.S.: 92 medals; China: 91 medals; Romania: 90 medals
B) U.S.: 32 medals; China: 31 medals; Romania: 30 medals
C) U.S.: 29 medals; China: 28 medals; Romania: 27 medals
D) U.S.: 31 medals; China: 30 medals; Romania: 29 medals
- 60) You have taken up gardening for relaxation and have decided to fence in your new rectangular shaped masterpiece. The length of the garden is 4 meters and 42 meters of fencing is required to completely enclose it. What is the width of the garden? 60) _____
A) 10.5 m B) 34 m C) 168 m D) 17 m
- 61) Nathan invested his \$3000 poker winnings in a 3 year Certificate of Deposit at a rate of 0.05. Use the formula $I = Prt$ to find the amount of interest Nathan's investment will earn. 61) _____
A) \$3,150 B) \$150 C) \$450 D) \$3,450

Solve. If needed, round money amounts to two decimal places and all other amounts to one decimal place.

- 62) A store is advertising 35% off sale on everything in the store. Find the discount of a chair that regularly sells for \$150. 62) _____
A) \$144.75 B) \$52.50 C) \$5.25 D) \$97.50

- 63) Ming got a 14% raise in her salary from last year. This year she is earning \$79,800. How much did she make last year? 63) _____
- A) \$9800 B) \$70,000 C) \$5700 D) \$1,117,200

Solve.

- 64) Linda and Dave leave simultaneously from the same starting point biking in opposite directions. Linda bikes at 5 miles per hour and Dave bikes at 10 miles per hour. How long will it be until they are 29 miles apart from each other? 64) _____
- A) $5\frac{4}{5}$ hr B) $1\frac{14}{15}$ hr C) $\frac{15}{29}$ hr D) $\frac{29}{50}$ hr
- 65) A certain store has a fax machine available for use by its customers. The store charges \$2.30 to send the first page and \$0.60 for each subsequent page. Use an inequality to find the maximum number of pages that can be faxed for \$7.10 65) _____
- A) at most 9 pages B) at most 54 pages
C) at most 12 pages D) at most 3 pages

Answer Key

Testname: 12APRACTICEFINAL

1) 33

2) 11

3) -10

4) -1.2

5) $3a + 3$

6) $6a - 9$

7) $-5z$

8) $8x + 3$

9) $16x^2 + 7x + 3$

10) $18n - 20$

11) $-36r - 9$

12) A

13) D

14) A

15) A

16) D

17) A

18) D

19) A

20) C

21) B

22) $\frac{11}{19}$

23) 100

24) B

25) C

26) D

27) -15

28) 4

29) $\frac{5}{4}$

30) -2

31) no solution

32) $-\frac{3}{5}$

33) D

34) B

35) C

36) D

37) A

38) D

39) B

40) 8

41) 8

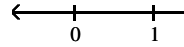
42) 7

43) $h = \frac{3V}{A}$

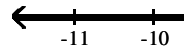
44) $W = \frac{P - 2L}{2}$

45) $C = \frac{5}{9}(F - 32)$

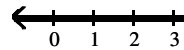
46) $(3, \infty)$



47) $(-\infty, -8)$



48) $(-\infty, 4)$



49) 527

50) shorter piece:

1 ft; longer

piece: 8 ft

51) 166, 168

52) 33.49 sq m

53) \$195.00

54) 26 \$20 bills; 78

\$10 bills

55) \$10,000

56) at most 12

arrows

57) A

58) B

59) D

60) D

61) C

62) B

63) B

64) B

65) A