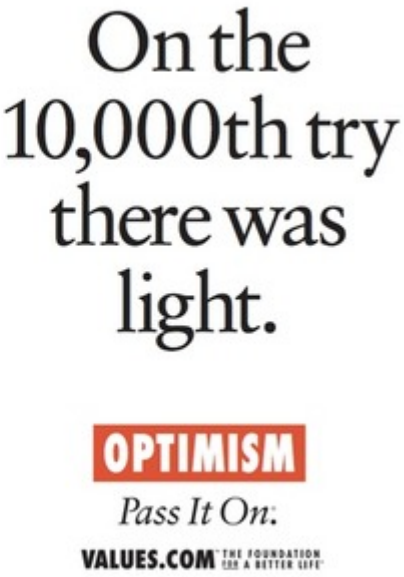
Math 0306 Final Exam Review



Show work for each exercise, if applicable. Any exercise requiring multiple steps or calculations must be supported by work in order to earn credit.

Whole Numbers

1. 6480 – 519 _____

2. 89(625) _____

3. 4371 ÷ 31 _____

4. Find the prime factored form of the number 600. _____

5.

a. $\frac{5}{0}$ _____

b. $\frac{0}{11}$ _____

6. $(11-6)^2 \div (15-10)^2$ _____

7. $13-4(7-5)$ _____

Integers

8. 8 + (-17) _____

9. (-14) + (-29) _____

10. (-82) – (-101) _____

11. (-19) – 12 + 9 _____

12. (-12)(-3) + (-4)(9) _____

13. $\frac{42}{-7}$ _____

14. $(-4)^3$ _____

15. $\frac{-40+2(7)}{-10-3}$ _____

16.

a. -|-8| _____

b. |-9| _____

17. $-5(3)^2 + 27 \div (-3)$ _____

Fractions & Decimals

Write all answers in simplest form. Reduce all fractions completely.

18. $\frac{18}{5} \cdot \frac{25}{27}$ _____

19. $-\frac{4}{7} \div \frac{2}{21}$ _____

20. $\frac{17}{24} - \frac{7}{24} + \frac{5}{24}$ _____

21. $-\frac{1}{5} + \frac{1}{2}$ _____

22. $2\frac{3}{4} \cdot 3\frac{1}{5}$ _____

23. $4 - \frac{5}{9}$ _____

24. $\frac{-\frac{35}{12}}{\frac{55}{12}}$ _____

25. $\left(-2\frac{5}{8}\right)\left(\frac{8}{21}\right)$ _____

26. $-\frac{4}{5} + \frac{1}{10} - \frac{1}{20}$ _____

27. (29.76) ÷ (6.2) _____

28. 3150.52 – 417.18 _____

29. 20 + 0.929 + 3.9 + 15.63 _____

30. 72 ÷ (-0.4) _____

31. 1.98 × 3.8 _____

Distributive Property, Algebraic Expressions, Exponents and Polynomials

32. -16x - 15 + 10x + 6 _____

33. 33 – 2(y - 7) + 3(5y + 1) _____

34. $x^{15} \cdot x^2$ _____

35. $(3x^5)^3$ _____

36. $(7x^{13})(-8x)$ _____

37. $-22x^2 + 19x^2$ _____

38. $(21x^2 - 8x - 4) + (3x^2 + 7x + 14)$ _____

39. $(9x^2 - x + 2) - (x^2 - 5x - 3)$ _____

40. $(x - 12)(x + 3)$ _____

41. $(2x - 5)(3x + 9)$ _____

42. $(x + 5)(x - 5)$ _____

Solving Linear Equations and Applications

43. $22n + 4 - 15n = -24$ _____

44. $-2(4y - 2) = -4(3y + 5)$ _____

45. $-3(x + 2) - 24 = 9x - 6$ _____

46. $-3a = 21$ _____

47. $7(y + 4) = 5y - 12$ _____

48. The length of a rectangle is 6 times its width. The perimeter of the rectangle is 280 yards. Find the width and the length.

Width = _____

Length = _____

49. Joanna, a professional ballet and gymnastics instructor, taught a total of 128 ballet and gymnastics classes last month. Joanna taught 3 times as many ballet classes as gymnastics classes. How many ballet classes did she teach? How many gymnastics classes did she teach?

Ballet Classes = _____

Gymnastics Classes = _____

50. You and your friends purchased 6 adult ski-lift tickets for a group skiing trip. Your group redeemed a coupon for a $45 discount. If your group paid $147 with the discount, what was the original price of each adult ski-lift ticket?

_____

Ratios, Rates, Proportions, and Percents

51. A train traveled 468 miles in 9 hours. Calculate the train's mileage per hour.

_____

52. $\frac{x}{20} = \frac{4}{5}$ _____

53. $\frac{14}{7} = \frac{x}{3}$ _____

54. A student earned 57 out of 60 points on her last quiz. Convert her score to a percent. _____

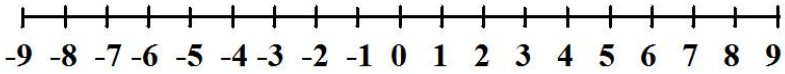
55. Thirty-two percent of the 50 dogs in an animal shelter are healthy. How many dogs are healthy?

_____

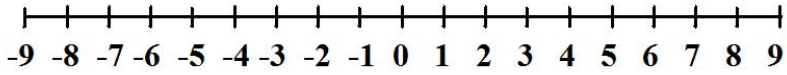
56. Abraham is purchasing his first car. The price of the car is $24,500. He must pay a 12% down payment of the price of the car in order to get a loan for the car. What is the amount of the 12% down payment of the $24,500 car?

_____

57. Graph: x < -2



58. Graph: $-3 < x \leq 8$



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Answer Key

1. 5,961
2. 55,625
3. 141
4. $2^3 \cdot 3 \cdot 5^2$
5. a. undefined; b. 0
6. 1
7. 5
8. -9
9. -43
10. 19
11. -22
12. 0
13. -6
14. -64
15. 2
16. a. -8; b. 9
17. -54
18. 10/3 or $3\frac{1}{3}$
19. -6
20. 5/8
21. 3/10
22. 44/5 or $8\frac{4}{5}$
23. 31/9 or $3\frac{4}{9}$
24. -7/11
25. -1
26. -3/4
27. 4.8
28. 2,733.34
29. 40.459
30. -180
31. 7.524
32. -6x - 9
33. 13y + 50
34. x^{17}
35. $27x^{15}$
36. $-56x^{14}$
37. $-3x^2$
38. $24x^2 - x + 10$
39. $8x^2 + 4x + 5$
40. $x^2 - 9x - 36$
41. $6x^2 + 3x - 45$
42. $x^2 - 25$
43. n = -4
44. y = -6
45. x = -2
46. a = -7
47. y = -20
48. Width = 20 yards; Length = 120 yards
49. Ballet Classes = 96; Gymnastics Classes = 32
50. $32
51. 52 miles per hour (mph)
52. x = 16
53. x = 6
54. 95%
55. 16
56. $2,940
57. See graph
58. See graph