Mathematics 8 Summer Review
(Show all work – use additional paper if necessary)

Evaluate the following expressions:

1. $48 + (-2)^3$

2. $(2^3 + 4^2) \div 4$

3. $(1 + 6)^2 * 3$

4. $41 + j^2$ for $j = 3$

5. $(5 + 2g)^5$ for $g = -2$

6. $f - (-4\frac{1}{3}) = -10$

7. $\frac{8}{9}h = -\frac{1}{3}$

8. $-0.25d = 2$

9. $5w + (-16) = -76$

10. $\frac{p}{-3} + (-8) = -8$

11. $\frac{e}{-4} + (-3) = 8$

12. $\frac{y}{9} = \frac{-1}{3}$

Solve the following:

13. Each day for several days, the charge in the price of a share of stock was –$3. The total charge in price during those days was –$36. Over how many days did the price decline?

14. Victoria had $15 in her coin bank. On her birthday, 5 relatives sent her money as a birthday gift. Each relative sent the same amount. She then had $115. How much money did Victoria receive from each relative?

15. The price of a share of stock changed by – $19.50 over a 5-day period. What was the average daily change in the price of a share of the stock?

16. Janet plans to save $22.50 each week until she has enough money to buy a $180 bicycle. After how many weeks will she have enough money for the bicycle?

17. What is the length of the hypotenuse of a right triangle whose legs have lengths 12 cm and 16 cm?

18. Frank had a score of –700 points in a video game. On each of the next 3 plays, he gained 400 points. Then what was his score?

19. In a video game, Frances scored – 250 points on her second play. This brought her total score to 500. What was her score on the first play?

Write an expression to answer each question.

20. What is the difference between d and 7?

21. Frances makes s batches of 12 cookies. How many cookies did she make?

22. Tamela plants 6 rows of t tomato plants each. How many tomato plants did she plant?

Evaluate each algebraic expression for the given values of the variable.

23. $t \div (-5)$ for $t = 35$

24. $20h \div 10$ for $h = 3$

25. $18 - 4k$ for $k = -1$

26. $\frac{6}{2d}$ for $d = -3$

27. Simplify: $\frac{11^2 \bullet 8^3}{4^2}$

28. Simplify: $\frac{3^3 \bullet 6^5}{6^1 \bullet 3}$

29. $(4d)(-5d)$ for $d = -8$

30. $5b(b - 4)$ for $b = -3$

31. $-8w + -7w$ for $w = -6$

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32. $4(m - n) + 2(m * n)$ for $m = 1$ and $n = 12$

33. $4a * (3 - 2b)$ for $a = \frac{1}{2}$ and $b = -1$

34. Solve: $3y + 5y - 6 = 34$

35. $2d (3 * 6) = 48y$ when $y = \frac{1}{4}$

36. $cd + (-6c) = 150$ when $d = 4$

Solve the following:

37. A clothing store can make 4 dress shirts out of 14 yards of cotton cloth. At that rate, how many dress shirts can be made out of 63 yards of cotton cloth?

38. Kendra received a bonus that was 30% of her monthly earnings. If her monthly earnings were $930, how much was Kendra's bonus?

39. This season in the middle school sports division, Frederick scored 150% of the number of touchdowns that he scored last season. If he scored 8 touchdowns last season, how many touchdowns did Frederick score this season?

40. What is the volume of a cylinder with a radius of 3 inches and a height of 5 inches? Round to the nearest tenth if necessary.

41. What is the surface area of a cube with edges measuring 16 feet?

42. What is the surface area of a cylinder with a diameter of 4 inches and a height of 5.6 inches?

Find the slope of the line through each pair of points.

43. A(2,4), B($-1, -2$)
44. B(3, 5), C(3, -8)
45. D(4,8), E(1, 8)

46. You pick a marble from a bag containing 1 green marble, 4 red marbles, 2 yellow marbles, and 3 black marbles. You replace the first marble and then select a second one. Find P(blue, then black)

47. If you do not replace the first marble in #46 before you select the second one, find P (red, then red).

Solve each multi-step equation.

48. $5x + 8 = x - 20$

49. $\dfrac{x + 6}{4} = \dfrac{2x}{5}$

50. $6(x - 8) = 12$

51. $-4(2x - 5) = 3x + 9$

52. $6x + 5 - 8x = 9 + 12$

53. $8(x - 3) = -5(2x - 7)$

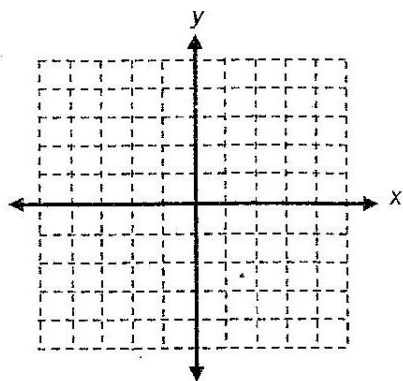54. $\dfrac{3x}{4} - 8 = 40$

55. $-16x + 5 - 4x = 8 + x + 10$

56. $\dfrac{2}{3}(3x - 6) = \dfrac{4}{5}(10x - 5)$

57. $-\dfrac{9x}{12} = \dfrac{3}{4}$

Solve each equation for y. Identify the slope and y-intercept. Then graph the equation.

1. $y = 4x + 3$
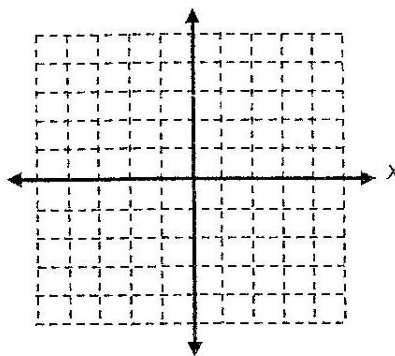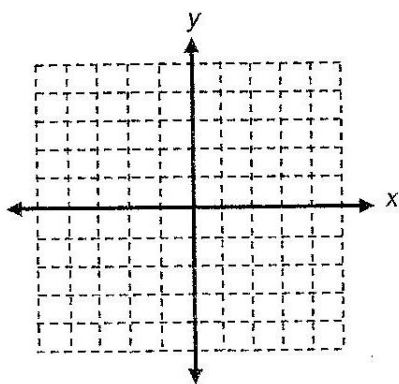
y = _____

m = _____

b = _____

2. $y = -3x + 1$

y = _____

m = _____

b = _____

3. $-3y = 3x - 9$
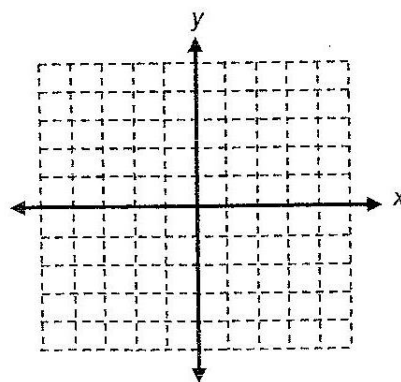
y = _____

m = _____

b = _____

4. $2y - 3x = 10$

y = _____

m = _____

b = _____