

Basic Skills Practice Questions

Fractions and Decimals:

1. $\frac{1}{4} + \frac{2}{3} =$

2. $\frac{3}{4} + \frac{4}{5} + \frac{3}{8} =$

3. $\frac{7}{8} - \frac{5}{6} =$

4. $\frac{2}{3} \times 1\frac{3}{4} =$

5. $7\frac{1}{2} \div \frac{3}{5} =$

6. $\frac{3+4-2}{2+1-5} =$

7. $0.02 \times 0.01 =$

8. $0.025 + 4.12 =$

Solving Proportions:

9. Find x if $\frac{8}{9} = \frac{x}{6}$

10. Find x if $\frac{x+3}{2x+7} = \frac{5}{9}$

11. Find x if $\frac{6}{x} = \frac{5}{7}$

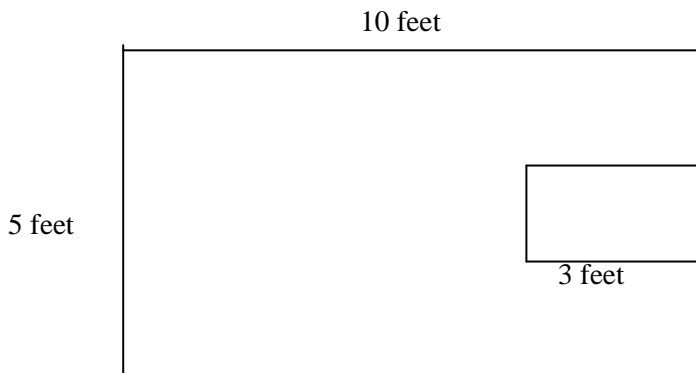
12. Find x if $\frac{x-2}{4} = \frac{5}{2}$

13. At a particular company, for every 3 female employees, there are 4 male employees. If the company employs 60 males, how many female employees work there?

14. A particular brand of fruit juice contains 70% orange juice and 30% pineapple juice. If the manufacturer is making 70 gallons of this fruit mix, how many gallons of each type of juice are needed?

Perimeters, Areas and Volumes:

15. Find the perimeter of the right-angled figure below:



16. What is the volume of a box whose length is 8 feet, width is 5 feet and height is 3 feet?

17. If a table-top has an area of 18 square feet and a length of 6 feet, what is its width?

18. What is the area of a circular mirror, if the measurement from edge to edge through the center of the mirror is 10 inches?

19. What is the circumference of a circular table top that has a radius of 2 feet?

Operations with Signed Numbers and Order of Operations:

20. $23 + 3 - 4(3 - 1) =$

21. $-2(5 - 2) - 5(3^2 - 17) =$

22. $15 - 2[(3 - 9) + 2] =$

23. $|7 - 8| =$

24. $[(3 + 2)(4 - 6)]^3 =$

25. $[(12 - 5)^2 - (5 - 7)]^{-1}$

Exponents and Simplifying and evaluating algebraic expressions:

26. Simplify: $2x^2 + 3x + 4x^2 - 5x$

27. Simplify: $(-3m^3n^6)(-5m^2n^5)$

28. Simplify: $(-4mn^3)^2(m^2n^2)$

29. $-4x^0 =$

30. Simplify $(m^2 \times m^8) + m^6$

31. $[(-x)^5] \times [(-x)^4]$

32. $\left(\frac{3m^{-2}}{5n^2}\right)^{-1} =$

33. $(3 \times 2)^3 =$

34. $27^{1/3}$

35. Write in exponential form $5 \times 5 \times 5 \times 5 \times 5$

36. Evaluate the expression $-(x^2) + 2y - z$ when $x = 3, y = 2, z = 1$.

37. Evaluate the expression $|-x^2 + 2y - z|$ when $x = 3, y = 2, z = -1$.

Solving first degree equations and inequalities:

38. Solve for x : $-x + 15 < 22$

39. Solve for x : $3x + 5 = 2$

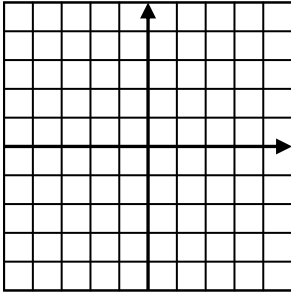
40. Solve for x : $5x + 7 = 3x + 4$

41. Solve for x : $2x + 5 < 3x - 15$

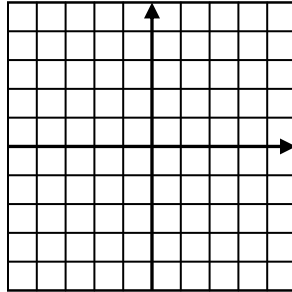
42. Solve for x : $x + 3 - (2x - 4) = 5(x - 5)$

Graphing linear equations:

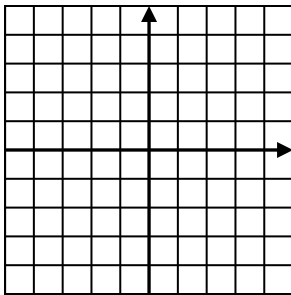
43. Graph: $y = \frac{1}{2}x - 3$



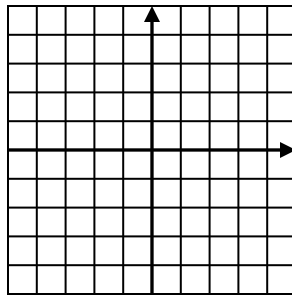
44. Graph: $y = -x + 3$



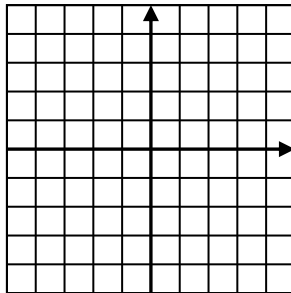
45. Graph: $y = 2x + 3$



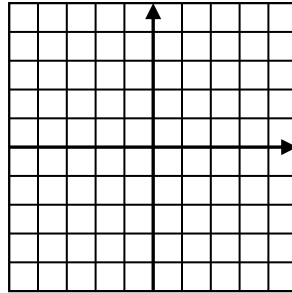
46. Graph: $y = -3x + 2$



47. Graph: $y = 4$



48. Graph: $x = -2$



49. Find the slope and y- intercept of the line whose equation is: $4y = 12x - 32$

50. Find the x- and y- intercepts of the line whose equation is: $y + 2x = 4$

51. Find the slope and y-intercept of the line whose equation is : $3y - 2x + 6 = 0$

52. James has 3 times more money than Terry. Together they have \$160. How much money does each person have?

53. Mary has done 16 more math problems than Sally. Together, they have done 80 problems. How many problems has each girl done?

Algebra Practice Solutions

1. $\frac{11}{12}$

2. $\frac{77}{40}$ or $1\frac{37}{40}$

3. $\frac{1}{24}$

4. $\frac{7}{6}$ or $1\frac{1}{6}$

5. $\frac{25}{2}$ or $12\frac{1}{2}$

6. $-\frac{5}{2}$ or $-2\frac{1}{2}$

7. 0.0002

8. 4.145

9. $\frac{48}{9}$ or $5\frac{1}{3}$

10. -8

11. $\frac{42}{5}$ or $8\frac{2}{5}$

12. 12

13. 45 women

14. 49 gallons orange juice

21 gallons pineapple
juice

15. 36 feet

16. 120 cubic feet

17. 3 feet

18. 25π square inches

19. 4π feet

20. 18

21. 34

22. 23

23. 1

24. -1000

25. $\frac{1}{51}$

26. $6x^2 - 2x$

27. $15m^5n^{11}$

28. $16m^4n^8$

29. -4

30. $m^{10} + m^6$

31. $-(x^9)$

32. $\frac{5m^2n^2}{3}$

33. 216

34. 3

35. 5^5

36. -6

37. 4

38. $x > -7$

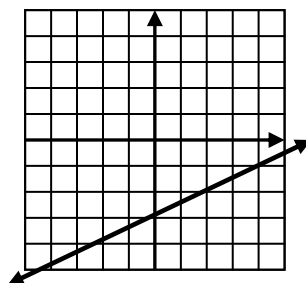
39. -1

40. $-\frac{3}{2}$ or $-1\frac{1}{2}$

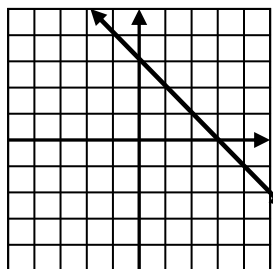
41. $x > 20$

42. $5\frac{1}{3}$

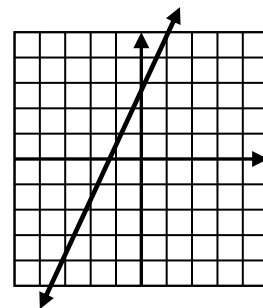
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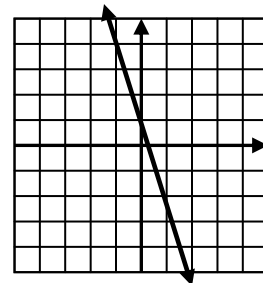
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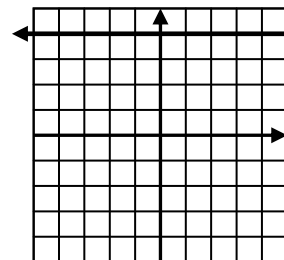
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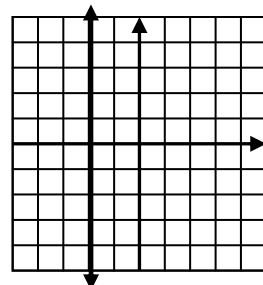
46.



47.



48.



49. slope = 3

y-intercept = -8

50. x-intercept = 2

y-intercept = 4

51. slope = $\frac{2}{3}$

y-intercept = -2

52. James = \$120

Terry = \$40

53. Sally = 32 problems

Mary = 48 problems