Math Worksheet for 7th Grade

Two-step equations with decimals and fractions

Name: Due Date: Teacher: Parent Sign:

Questions

1. Solve: $0.5x + 3 = 8$

2. Solve: $2x - 0.75 = 5.25$

3. Solve: $(\frac{3}{4})x + 2 = 5$

4. Solve: $x/5 + 1.2 = 3.2$

5. Solve: $1.5x - 2.25 = 0.75$

6. Solve: $(\frac{2}{3})x - \frac{1}{6} = \frac{1}{2}$

7. Solve: $4.2 + 0.6x = 10.2$

8. Solve: $(\frac{5}{8})x + 1 = 3$

9. Solve: $(\frac{3}{7})x - 0.5 = 1.5$

10. Solve: $0.25x + 4.75 = 6.25$

11. Solve: $(\frac{7}{10})x - 0.3 = 0.4$

12. Solve: $(\frac{4}{5})x + 2.4 = 6.4$

13. Solve: $x \div 0.2 + 2 = 12$

14. Solve: $6 - 1.2x = 2.4$

15. Solve: $(\frac{9}{4})x + 1 = 5$

16. Solve: $2.5x - 0.75 = 4.25$

17. Solve: $(\frac{1}{3})x + 0.6 = 1.2$

18. Solve: $\frac{11}{5} - (\frac{1}{5})x = 2$

19. Solve: $0.4(x + 5) = 12$

20. Solve: $(\frac{3}{2})(x - 2) = 6$

Word problems (set up a two-step equation, then solve)

21. Sarah had $20. She bought a book and paid $3.75 shipping. After the purchase she had $8.50 left. How much did the book cost?

22. A car rental charges $26 per day plus a $13 one-time fee. The total bill was $141. How many days was the car rented?

23. Ella bought 3 identical shirts and paid $2.25 shipping (one-time). The total was $54.75. How much was one shirt?

24. A pump fills a tank at 1.8 gallons per minute for x minutes, but 0.6 gallons spilled out. After filling, the tank has 10.2 gallons. For how many minutes did the pump run?

25. Kayla bought 2 notebooks priced $2.10 each and some pencils at $0.45 each. She spent $7.80 total. How many pencils did she buy?

26. A number, when multiplied by 0.4 and then decreased by 1.2, equals 2.8. What is the number?

27. A tank originally had x liters. After removing $\frac{1}{5}$ of the water and then adding 8 liters, it had 28 liters. Find x.

28. A sweater was sold for $45 after a 25% discount. What was the original price?

29. A recipe uses $(\frac{3}{8})$ cup oil per batch. After making x batches Paula had used 2.25 cups and had added an extra $\frac{1}{8}$ cup by mistake. How many batches did she actually make?

30. Tom's phone plan charges a $12.50 base plus $0.08 per text. His bill was $20.90. How many texts did Tom send?

Find the mistake – for each, a student's steps (or result) are given. Identify the mistake and give the correct solution.

31. Equation: $0.5x + 2 = 5$

Student: Subtract 2 ? $0.5x = 3$. Multiply both sides by 0.5 ? $x = 1.5$.

32. Equation: $(\frac{3}{4})x - 1 = 2$

Student: Add 1 ? $(\frac{3}{4})x = 1$. Then solve to get $x = \frac{4}{3}$.

33. Equation: $(\frac{5}{8})x + 2 = 6$

Student: Subtract 2 ? $(\frac{5}{8})x = 4$. Multiply both sides by $\frac{5}{8}$? $x = 2.5$.

34. Equation: $2x - 1.2 = 3.8$

Student: Add 1.2 ? $2x = 2.6$. Then $x = 1.3$.

35. Equation: $0.25x + 4.75 = 6.25$

Student: Subtract 4.75 ? $0.25x = 1.5$. Divide both sides by 4 ? $x = 0.375$.

36. Equation: $x/5 + 1.2 = 3.2$

Student: Subtract 1.2 ? $x/5 = 2$. Multiply both sides by $\frac{1}{5}$? $x = 0.4$.

37. Equation: $4.2 + 0.6x = 10.2$

Student: Subtract 4.2 ? $0.6x = 6$. Multiply both sides by 0.6 ? $x = 3.6$.

38. Equation: $3x/7 - 0.5 = 1.5$

Student: Add 0.5 ? $3x/7 = 1.0$. Then solve from there.

39. Equation: $(\frac{7}{10})x - 0.3 = 0.4$

Student: Add 0.3 ? $(\frac{7}{10})x = 0.1$. Then solve from there.

40. Equation: $0.4(x + 5) = 12$

Student: Distribute ? $0.4x + 5 = 12$. Then solve.

41. Equation: $(\frac{3}{2})(x - 2) = 6$

Student: Distribute ? $(\frac{3}{2})x - 2 = 6$. Then solve.

42. Equation: $(\frac{5}{6})x - 0.75 = 1.25$

Student: Add 0.75 ? $(\frac{5}{6})x = 0.5$. Then solve.

43. Equation: $(\frac{7}{3})x + 0.6 = 6$

Student: Subtract 0.6 ? $(\frac{7}{3})x = 5.4$. Then multiply both sides by $\frac{7}{3}$ to get x.

44. Equation: $(\frac{1}{3})x + 0.6 = 1.2$

Student: Subtract 0.6 ? $(\frac{1}{3})x = 0.6$. Multiply by 3 ? $x = 1.8$.

45. Equation: $(\frac{5}{8})x - 1.25 = 0.75$

Student: Add 1.25 ? $(\frac{5}{8})x = 0.5$. Then $x = 0.5 \div (\frac{5}{8}) = 0.1$.

Mixed/extra two-step equations (decimals & fractions)

46. Solve: $(\frac{3}{4})(x + 2) = 4.5$

47. Solve: $(\frac{5}{6})x - 0.75 = 1.25$

48. Solve: $0.9x + 1.35 = 4.5$

49. Solve: $(\frac{7}{3})x + 0.6 = 6$

50. Solve: $(x/4) + (\frac{3}{2}) = 5$