

Linear Equation Word Problems

50 SAT-Style Practice Questions • Equations in the form $ax + by = c$

Name: _____ Date: _____

Directions: Read each situation carefully. Use the given equation to determine the difference between the amount of time represented by one y-item and one x-item. Show your work.

1. A certain apprentice has enrolled in 14 hours of training courses. The equation $1x + 2y = 14$ represents this situation, where x is the number of morning on-site courses and y is the number of evening online courses. How many more hours does each evening online course take than each morning on-site course?

Answer: _____

2. A student has completed 29 hours of study through two types of review sessions. The equation $2x + 5y = 29$ represents this situation, where x is the number of beginner workshops and y is the number of advanced workshops. How many more hours does each advanced workshop take than each beginner workshop?

Answer: _____

3. A company scheduled 44 hours of employee training using two types of workshops. The equation $3x + 7y = 44$ represents this situation, where x is the number of in-person seminars and y is the number of virtual seminars. How many more hours does each virtual seminar take than each in-person seminar?

Answer: _____

4. A community center has allocated 50 hours to two types of classes. The equation $4x + 9y = 50$ represents this situation, where x is the number of lab sessions and y is the number of lecture sessions. How many more hours does each lecture session take than each lab session?

Answer: _____

5. A certain apprentice has enrolled in 61 hours of training courses. The equation $5x + 8y = 61$ represents this situation, where x is the number of small-group sessions and y is the number of individual sessions. How many more hours does each individual session take than each small-group session?

Answer: _____

6. A student has completed 74 hours of study through two types of review sessions. The equation $6x + 10y = 74$ represents this situation, where x is the number of weekday classes and y is the number of weekend classes. How many more hours does each weekend class take than each weekday class?

Answer: _____

7. A company scheduled 42 hours of employee training using two types of workshops. The equation $3x + 6y = 42$ represents this situation, where x is the number of technical courses and y is the number of professional-development courses. How many more hours does each professional-development course take than each technical course?

Answer: _____

8. A community center has allocated 55 hours to two types of classes. The equation $4x + 7y = 55$ represents this situation, where x is the number of morning training sessions and y is the number of afternoon training sessions. How many more hours does each afternoon training session take than each morning training session?

Answer: _____

9. A certain apprentice has enrolled in 68 hours of training courses. The equation $5x + 9y = 68$ represents this situation, where x is the number of orientation sessions and y is the number of skills-training sessions. How many more hours does each skills-training session take than each orientation session?

Answer: _____

10. A student has completed 81 hours of study through two types of review sessions. The equation $7x + 11y = 81$ represents this situation, where x is the number of in-person review sessions and y is the number of online review sessions. How many more hours does each online review session take than each in-person review session?

Answer: _____

11. A company scheduled 38 hours of employee training using two types of workshops. The equation $2x + 6y = 38$ represents this situation, where x is the number of morning on-site courses and y is the number of evening online courses. How many more hours does each evening online course take than each morning on-site course?

Answer: _____

12. A community center has allocated 51 hours to two types of classes. The equation $3x + 8y = 51$ represents this situation, where x is the number of beginner workshops and y is the number of advanced workshops. How many more hours does each advanced workshop take than each beginner workshop?

Answer: _____

13. A certain apprentice has enrolled in 64 hours of training courses. The equation $4x + 10y = 64$ represents this situation, where x is the number of in-person seminars and y is the number of virtual seminars. How many more hours does each virtual seminar take than each in-person seminar?

Answer: _____

14. A student has completed 77 hours of study through two types of review sessions. The equation $5x + 12y = 77$ represents this situation, where x is the number of lab sessions and y is the number of lecture sessions. How many more hours does each lecture session take than each lab session?

Answer: _____

15. A company scheduled 84 hours of employee training using two types of workshops. The equation $6x + 9y = 84$ represents this situation, where x is the number of small-group sessions and y is the number of individual sessions. How many more hours does each individual session take than each small-group session?

Answer: _____

16. A community center has allocated 92 hours to two types of classes. The equation $7x + 13y = 92$ represents this situation, where x is the number of weekday classes and y is the number of weekend classes. How many more hours does each weekend class take than each weekday class?

Answer: _____

17. A certain apprentice has enrolled in 110 hours of training courses. The equation $8x + 14y = 110$ represents this situation, where x is the number of technical courses and y is the number of professional-development courses. How many more hours does each professional-development course take than each technical course?

Answer: _____

18. A student has completed 123 hours of study through two types of review sessions. The equation $9x + 15y = 123$ represents this situation, where x is the number of morning training sessions and y is the number of afternoon training sessions. How many more hours does each afternoon training session take than each morning training session?

Answer: _____

19. A company scheduled 136 hours of employee training using two types of workshops. The equation $10x + 16y = 136$ represents this situation, where x is the number of orientation sessions and y is the number of skills-training sessions. How many more hours does each skills-training session take than each orientation session?

Answer: _____

20. A community center has allocated 70 hours to two types of classes. The equation $4x + 11y = 70$ represents this situation, where x is the number of in-person review sessions and y is the number of online review sessions. How many more hours does each online review session take than each in-person review session?

Answer: _____

21. A certain apprentice has enrolled in 45 hours of training courses. The equation $2x + 7y = 45$ represents this situation, where x is the number of morning on-site courses and y is the number of evening online courses. How many more hours does each evening online course take than each morning on-site course?

Answer: _____

22. A student has completed 57 hours of study through two types of review sessions. The equation $3x + 9y = 57$ represents this situation, where x is the number of beginner workshops and y is the number of advanced workshops. How many more hours does each advanced workshop take than each beginner workshop?

Answer: _____

23. A company scheduled 75 hours of employee training using two types of workshops. The equation $5x + 10y = 75$ represents this situation, where x is the number of in-person seminars and y is the number of virtual seminars. How many more hours does each virtual seminar take than each in-person seminar?

Answer: _____

24. A community center has allocated 90 hours to two types of classes. The equation $6x + 12y = 90$ represents this situation, where x is the number of lab sessions and y is the number of lecture sessions. How many more hours does each lecture session take than each lab session?

Answer: _____

25. A certain apprentice has enrolled in 105 hours of training courses. The equation $7x + 14y = 105$ represents this situation, where x is the number of small-group sessions and y is the number of individual sessions. How many more hours does each individual session take than each small-group session?

Answer: _____

26. A student has completed 112 hours of study through two types of review sessions. The equation $8x + 13y = 112$ represents this situation, where x is the number of weekday classes and y is the number of weekend classes. How many more hours does each weekend class take than each weekday class?

Answer: _____

27. A company scheduled 121 hours of employee training using two types of workshops. The equation $9x + 14y = 121$ represents this situation, where x is the number of technical courses and y is the number of professional-development courses. How many more hours does each professional-development course take than each technical course?

Answer: _____

28. A community center has allocated 135 hours to two types of classes. The equation $10x + 15y = 135$ represents this situation, where x is the number of morning training sessions and y is the number of afternoon training sessions. How many more hours does each afternoon training session take than each morning training session?

Answer: _____

29. A certain apprentice has enrolled in 62 hours of training courses. The equation $3x + 10y = 62$ represents this situation, where x is the number of orientation sessions and y is the number of skills-training sessions. How many more hours does each skills-training session take than each orientation session?

Answer: _____

30. A student has completed 76 hours of study through two types of review sessions. The equation $4x + 12y = 76$ represents this situation, where x is the number of in-person review sessions and y is the number of online review sessions. How many more hours does each online review session take than each in-person review session?

Answer: _____

31. A company scheduled 91 hours of employee training using two types of workshops. The equation $5x + 13y = 91$ represents this situation, where x is the number of morning on-site courses and y is the number of evening online courses. How many more hours does each evening online course take than each morning on-site course?

Answer: _____

32. A community center has allocated 104 hours to two types of classes. The equation $6x + 14y = 104$ represents this situation, where x is the number of beginner workshops and y is the number of advanced workshops. How many more hours does each advanced workshop take than each beginner workshop?

Answer: _____

33. A certain apprentice has enrolled in 118 hours of training courses. The equation $7x + 15y = 118$ represents this situation, where x is the number of in-person seminars and y is the number of virtual seminars. How many more hours does each virtual seminar take than each in-person seminar?

Answer: _____

34. A student has completed 128 hours of study through two types of review sessions. The equation $8x + 16y = 128$ represents this situation, where x is the number of lab sessions and y is the number of lecture sessions. How many more hours does each lecture session take than each lab session?

Answer: _____

35. A company scheduled 145 hours of employee training using two types of workshops. The equation $9x + 17y = 145$ represents this situation, where x is the number of small-group sessions and y is the number of individual sessions. How many more hours does each individual session take than each small-group session?

Answer: _____

36. A community center has allocated 52 hours to two types of classes. The equation $2x + 8y = 52$ represents this situation, where x is the number of weekday classes and y is the number of weekend classes. How many more hours does each weekend class take than each weekday class?

Answer: _____

37. A certain apprentice has enrolled in 71 hours of training courses. The equation $3x + 11y = 71$ represents this situation, where x is the number of technical courses and y is the number of professional-development courses. How many more hours does each professional-development course take than each technical course?

Answer: _____

38. A student has completed 82 hours of study through two types of review sessions. The equation $4x + 13y = 82$ represents this situation, where x is the number of morning training sessions and y is the number of afternoon training sessions. How many more hours does each afternoon training session take than each morning training session?

Answer: _____

39. A company scheduled 99 hours of employee training using two types of workshops. The equation $5x + 14y = 99$ represents this situation, where x is the number of orientation sessions and y is the number of skills-training sessions. How many more hours does each skills-training session take than each orientation session?

Answer: _____

40. A community center has allocated 111 hours to two types of classes. The equation $6x + 15y = 111$ represents this situation, where x is the number of in-person review sessions and y is the number of online review sessions. How many more hours does each online review session take than each in-person review session?

Answer: _____

41. A certain apprentice has enrolled in 125 hours of training courses. The equation $7x + 16y = 125$ represents this situation, where x is the number of morning on-site courses and y is the number of evening online courses. How many more hours does each evening online course take than each morning on-site course?

Answer: _____

42. A student has completed 139 hours of study through two types of review sessions. The equation $8x + 17y = 139$ represents this situation, where x is the number of beginner workshops and y is the number of advanced workshops. How many more hours does each advanced workshop take than each beginner workshop?

Answer: _____

43. A company scheduled 153 hours of employee training using two types of workshops. The equation $9x + 18y = 153$ represents this situation, where x is the number of in-person seminars and y is the number of virtual seminars. How many more hours does each virtual seminar take than each in-person seminar?

Answer: _____

44. A community center has allocated 160 hours to two types of classes. The equation $10x + 18y = 160$ represents this situation, where x is the number of lab sessions and y is the number of lecture sessions. How many more hours does each lecture session take than each lab session?

Answer: _____

45. A certain apprentice has enrolled in 88 hours of training courses. The equation $4x + 14y = 88$ represents this situation, where x is the number of small-group sessions and y is the number of individual sessions. How many more hours does each individual session take than each small-group session?

Answer: _____

46. A student has completed 105 hours of study through two types of review sessions. The equation $5x + 15y = 105$ represents this situation, where x is the number of weekday classes and y is the number of weekend classes. How many more hours does each weekend class take than each weekday class?

Answer: _____

47. A company scheduled 120 hours of employee training using two types of workshops. The equation $6x + 16y = 120$ represents this situation, where x is the number of technical courses and y is the number of professional-development courses. How many more hours does each professional-development course take than each technical course?

Answer: _____

48. A community center has allocated 132 hours to two types of classes. The equation $7x + 17y = 132$ represents this situation, where x is the number of morning training sessions and y is the number of afternoon training sessions. How many more hours does each afternoon training session take than each morning training session?

Answer: _____

49. A certain apprentice has enrolled in 148 hours of training courses. The equation $8x + 18y = 148$ represents this situation, where x is the number of orientation sessions and y is the number of skills-training sessions. How many more hours does each skills-training session take than each orientation session?

Answer: _____

50. A student has completed 162 hours of study through two types of review sessions. The equation $9x + 19y = 162$ represents this situation, where x is the number of in-person review sessions and y is the number of

online review sessions. How many more hours does each online review session take than each in-person review session?

Answer: _____

Answer Key

For each question, subtract the coefficient of x from the coefficient of y: $b - a$.

1. 1 hours 2. 3 hours 3. 4 hours 4. 5 hours 5. 3 hours 6. 4 hours 7. 3 hours 8. 3 hours 9. 4 hours 10. 4 hours
11. 4 hours 12. 5 hours 13. 6 hours 14. 7 hours 15. 3 hours 16. 6 hours 17. 6 hours 18. 6 hours 19. 6 hours 20. 7 hours
21. 5 hours 22. 6 hours 23. 5 hours 24. 6 hours 25. 7 hours 26. 5 hours 27. 5 hours 28. 5 hours 29. 7 hours 30. 8 hours
31. 8 hours 32. 8 hours 33. 8 hours 34. 8 hours 35. 8 hours 36. 6 hours 37. 8 hours 38. 9 hours 39. 9 hours 40. 9 hours
41. 9 hours 42. 9 hours 43. 9 hours 44. 8 hours 45. 10 hours 46. 10 hours 47. 10 hours 48. 10 hours 49. 10 hours 50. 10 hours