ANSWERS

CHAPTER 11 Dimensional Analysis—Worksheet, pp. 215–238

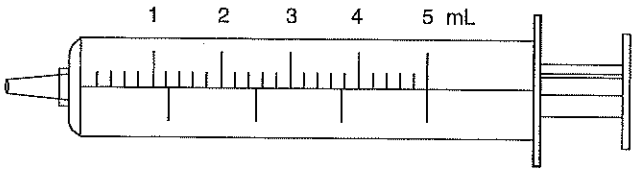
1. $x \text{ capsules} = \dfrac{1 \text{ capsule}}{1 \text{ mg}} \times \dfrac{2 \text{ mg}}{1}$
$= 2 \text{ capsules}$

2. $x \text{ mL} = \dfrac{5 \text{ mL}}{20 \text{ mg}} \times \dfrac{30 \text{ mg}}{1} = 7.5 \text{ mL}$

3. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.05 \text{ mg}} \times \dfrac{0.2 \text{ mg}}{1}$
$= 4 \text{ tablets}$
$x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.05 \text{ mg}} \times \dfrac{0.15 \text{ mg}}{1}$
$= 3 \text{ tablets}$

4. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{250 \text{ mg}} \times \dfrac{500 \text{ mg}}{1} = 2 \text{ tablets}$

5. $x \text{ mL} = \dfrac{5 \text{ mL}}{5 \text{ mg}} \times \dfrac{2.5 \text{ mg}}{1} = 2.5 \text{ mL}$

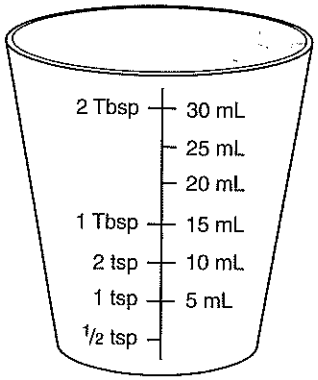


6. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{1 \text{ mg}} \times \dfrac{2 \text{ mg}}{1} = 2 \text{ tablets}$

7. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{10 \text{ mg}} \times \dfrac{20 \text{ mg}}{1} = 2 \text{ tablets}$

8. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.5 \text{ g}} \times \dfrac{1 \text{ g}}{1} = 2 \text{ tablets}$

9. $x \text{ mL} = \dfrac{5 \text{ mL}}{20 \text{ mg}} \times \dfrac{40 \text{ mg}}{1} = 10 \text{ mL}$



10. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.5 \text{ mg}} \times \dfrac{1 \text{ mg}}{1} = 2 \text{ tablets}$

11. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{400 \text{ mg}} \times \dfrac{800 \text{ mg}}{1} = 2 \text{ tablets}$

12. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{300 \text{ mg}} \times \dfrac{1000 \text{ mg}}{1 \text{ g}} \times \dfrac{0.6 \text{ g}}{1}$
$= 2 \text{ tablets}$
$x \text{ mg} = \dfrac{300 \text{ mg}}{1 \text{ tablet}} \times \dfrac{2 \text{ tablets}}{1 \text{ dose}} \times \dfrac{2 \text{ doses}}{1 \text{ day}}$
$= 1200 \text{ mg}$

13. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{10 \text{ mg}} \times \dfrac{30 \text{ mg}}{1} = 3 \text{ tablets}$

14. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{750 \text{ mg}} \times \dfrac{1000 \text{ mg}}{1 \text{ g}} \times \dfrac{0.75 \text{ g}}{1}$
$= 1 \text{ tablet}$

15. $x \text{ capsules} = \dfrac{1 \text{ capsule}}{40 \text{ mg}} \times \dfrac{80 \text{ mg}}{1}$
$= 2 \text{ capsules}$

16. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.5 \text{ g}} \times \dfrac{4 \text{ g}}{1} = 8 \text{ tablets}$
$x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.5 \text{ g}} \times \dfrac{2 \text{ g}}{1} = 4 \text{ tablets}$

17. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{400 \text{ mg}} \times \dfrac{800 \text{ mg}}{1} = 2 \text{ tablets}$

18. $x = \dfrac{30 \text{ mL}}{\text{Dose}} \times \dfrac{4 \text{ doses}}{1} = 120 \text{ mL}$

19. $x \text{ mL} = \dfrac{5 \text{ mL}}{12.5 \text{ mg}} \times \dfrac{30 \text{ mg}}{1} = 12 \text{ mL}$

20. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{30 \text{ mg}} \times \dfrac{60 \text{ mg}}{1}$
$= 2 \text{ tablets}$

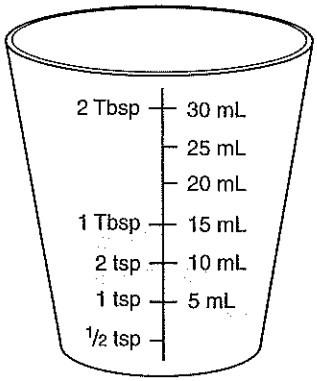
21. $x \text{ mg} = \dfrac{125 \text{ mg}}{5 \text{ mL}} \times \dfrac{5.5 \text{ mL}}{1} = 137.5 \text{ mg}$

22. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{40 \text{ mg}} \times \dfrac{80 \text{ mg}}{1} = 2 \text{ tablets}$

23. $x \text{ mg} = \dfrac{0.4 \text{ mg}}{1 \text{ tablet}} \times \dfrac{2 \text{ tablets}}{1} = 0.8 \text{ mg}$

24. $x \text{ mL} = \dfrac{5 \text{ mL}}{0.5 \text{ mg}} \times \dfrac{1.5 \text{ mg}}{1} = 15 \text{ mL}$

$x \text{ oz} = \dfrac{1 \text{ oz}}{30 \text{ mL}} \times \dfrac{15 \text{ mL}}{1} = 0.5 \text{ oz}$



25. $x \text{ mL} = \dfrac{5 \text{ mL}}{375 \text{ mg}} \times \dfrac{500 \text{ mg}}{1} = 6.7 \text{ mL}$

26. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{50 \text{ mg}} \times \dfrac{25 \text{ mg}}{1} = 0.5 \text{ tablet}$

27. $x \text{ doses} = \dfrac{1 \text{ dose}}{30 \text{ mL}} \times \dfrac{360 \text{ mL}}{1} = 12 \text{ doses}$

28. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.125 \text{ mg}} \times \dfrac{0.25 \text{ mg}}{1}$

$= 2 \text{ tablets}$

29. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{30 \text{ mg}} \times \dfrac{15 \text{ mg}}{1} = 0.5 \text{ tablet}$

30. $x \text{ mL} = \dfrac{5 \text{ mL}}{250 \text{ mg}} \times \dfrac{125 \text{ mg}}{1} = 2.5 \text{ mL}$

31. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{50 \text{ mg}} \times \dfrac{25 \text{ mg}}{1} = 0.5 \text{ tablet}$

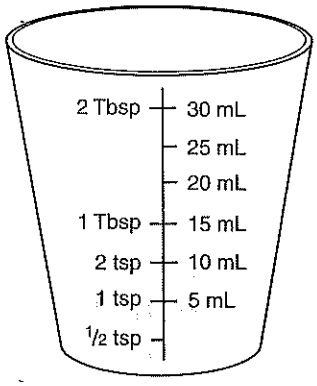
32. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{200 \text{ mg}} \times \dfrac{1000 \text{ mg}}{1 \text{ g}} \times \dfrac{0.6 \text{ g}}{1}$

$= 3 \text{ tablets}$

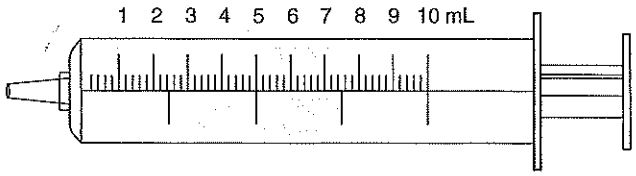
$x \text{ tablets} = \dfrac{3 \text{ tablets}}{1 \text{ dose}} \times \dfrac{6 \text{ doses}}{1}$

$= 18 \text{ tablets}$

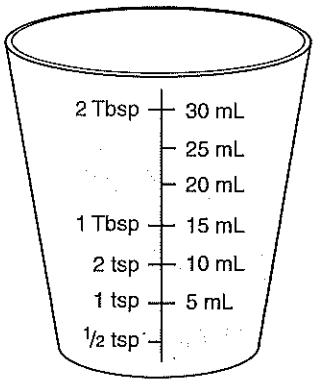
33. $x \text{ mL} = \dfrac{5 \text{ mL}}{4 \text{ mg}} \times \dfrac{8 \text{ mg}}{1} = 10 \text{ mL}$



34. $x \text{ mL} = \dfrac{5 \text{ mL}}{500 \text{ mg}} \times \dfrac{750 \text{ mg}}{1} = 7.5 \text{ mL}$



35. $x \text{ mL} = \dfrac{5 \text{ mL}}{20 \text{ mg}} \times \dfrac{100 \text{ mg}}{1} = 25 \text{ mL}$



36. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{500 \text{ mg}} \times \dfrac{1000 \text{ mg}}{1 \text{ g}} \times \dfrac{1 \text{ g}}{1}$

$= 2 \text{ tablets}$

37. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{2.5 \text{ mg}} \times \dfrac{7.5 \text{ mg}}{1} = 3 \text{ tablets}$

38. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{100 \text{ mg}} \times \dfrac{1000 \text{ mg}}{1 \text{ g}} \times \dfrac{0.2 \text{ g}}{1}$

$= 2 \text{ tablets}$

39. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{5 \text{ mg/500 mg}} \times \dfrac{5 \text{ mg/500 mg}}{1}$
$= 1 \text{ tablet}$

$x \text{ acetaminophen} = \dfrac{500 \text{ mg}}{1 \text{ tablet}} \times \dfrac{1 \text{ tablet}}{1}$
$= 500 \text{ mg acetaminophen}$

40. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.25 \text{ mg}} \times \dfrac{0.5 \text{ mg}}{1} = 2 \text{ tablets}$

41. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{5 \text{ mg}} \times \dfrac{10 \text{ mg}}{1} = 2 \text{ tablets}$

42. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{50 \text{ mg}} \times \dfrac{100 \text{ mg}}{1} = 2 \text{ tablets}$

43. $x \text{ capsules} = \dfrac{1 \text{ capsule}}{300 \text{ mg}} \times \dfrac{600 \text{ mg}}{1}$
$= 2 \text{ capsules}$

44. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.125 \text{ mg}} \times \dfrac{0.25 \text{ mg}}{1}$
$= 2 \text{ tablets}$

45. $x \text{ capsules} = \dfrac{1 \text{ capsule}}{250 \text{ mg}} \times \dfrac{500 \text{ mg}}{1}$
$= 2 \text{ capsules}$

$x \text{ capsules} = \dfrac{2 \text{ capsules}}{1 \text{ dose}} \times \dfrac{4 \text{ doses}}{1}$
$= 8 \text{ capsules}$

46. $x \text{ capsules} = \dfrac{1 \text{ capsule}}{20 \text{ mg}} \times \dfrac{40 \text{ mg}}{1}$
$= 2 \text{ capsules}$

47. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{30 \text{ mg}} \times \dfrac{90 \text{ mg}}{1} = 3 \text{ tablets}$

48. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{75 \text{ mg}} \times \dfrac{150 \text{ mg}}{1} = 2 \text{ tablets}$

49. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{12.5 \text{ mg}} \times \dfrac{25 \text{ mg}}{1} = 2 \text{ tablets}$

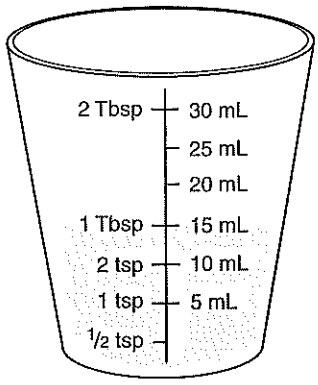
50. $x \text{ mL} = \dfrac{1 \text{ mL}}{15 \text{ mg}} \times \dfrac{150 \text{ mg}}{1} = 10 \text{ mL}$

51. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{250 \text{ mg}} \times \dfrac{500 \text{ mg}}{1} = 2 \text{ tablets}$

52. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{0.1 \text{ mg}} \times \dfrac{0.2 \text{ mg}}{1} = 2 \text{ tablets}$

53. $x \text{ capsules} = \dfrac{1 \text{ capsule}}{10 \text{ mg}} \times \dfrac{20 \text{ mg}}{1}$
$= 2 \text{ capsules}$

54. $x \text{ mL} = \dfrac{5 \text{ mL}}{10 \text{ mg}} \times \dfrac{30 \text{ mg}}{1} = 15 \text{ mL}$



55. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{250 \text{ mg}} \times \dfrac{1000 \text{ mg}}{1 \text{ g}} \times \dfrac{0.75 \text{ g}}{1}$
$= 3 \text{ tablets}$

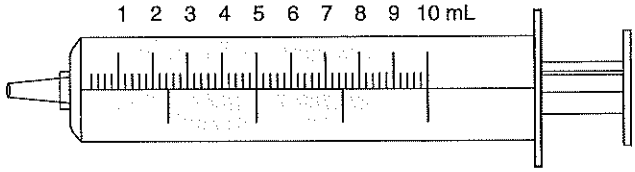
56. $x \text{ mL} = \dfrac{5 \text{ mL}}{4 \text{ mg}} \times \dfrac{8 \text{ mg}}{1} = \dfrac{40}{4} = 10 \text{ mL}$

57. $x \text{ mL} = \dfrac{5 \text{ mL}}{25 \text{ mg}} \times \dfrac{15 \text{ mg}}{1} = 3 \text{ mL}$

58. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{50 \text{ mg}} \times \dfrac{100 \text{ mg}}{1} = 2 \text{ tablets}$

59. $x \text{ tablets} = \dfrac{1 \text{ tablet}}{500 \text{ mg}} \times \dfrac{1000 \text{ mg}}{1 \text{ g}} \times \dfrac{1 \text{ g}}{1}$
$= 2 \text{ tablets}$

60. $x \text{ mL} = \dfrac{5 \text{ mL}}{150 \text{ mg}} \times \dfrac{250 \text{ mg}}{1} = 8.3 \text{ mL}$



61. $x \text{ mL} = \dfrac{5 \text{ mL}}{50 \text{ mg}} \times \dfrac{100 \text{ mg}}{1} = 10 \text{ mL}$