

**4.1 Multiplication of Decimals and Whole Numbers**

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**Answers**

- |           |           |            |            |            |             |
|-----------|-----------|------------|------------|------------|-------------|
| 1. 6.2    | 2. 46.86  | 3. 65.1    | 4. 11.6    | 5. 111.06  | 6. 7.12     |
| 7. 42.72  | 8. 12.6   | 9. 12      | 10. 21.126 | 11. 6.444  | 12. 12.669  |
| 13. 49.36 | 14. 62.25 | 15. 429.36 | 16. 54.688 | 17. 39.802 | 18. 201.963 |

**4.2 Estimation to Check Decimal Multiplication**

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**Answers**

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|---------|---------|--------|---------|---------|--------|
| 1. 12   | 2. 10   | 3. 12  | 4. 18   | 5. 40   | 6. 63  |
| 7. 32f  | 8. 24   | 9. 90  | 10. 7   | 11. 32  | 12. 40 |
| 13. 120 | 14. 108 | 15. 72 | 16. 126 | 17. 112 |        |

**4.3 Properties of Multiplication in Decimal Operations**

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**Answers**

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|-----------------|-----------------|-----------------|
| 1. commutative  | 2. Associative  | 3. Associative  |
| 4. Commutative  | 5. commutative  | 6. Commutative  |
| 7. Associative  | 8. Associative  | 9. commutative  |
| 10. Associative | 11. Commutative | 12. Commutative |
| 13. associative | 14. Commutative | 15. Associative |

**4.4 Expressions for the Product of a Number and a Sum**

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**Answers**

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|-----------------|-----------------|-----------------|
| 1. $2(5 + 6)$   | 2. $3(3 + 7)$   | 3. $5(2 + 3)$   |
| 4. $4(3 + 5)$   | 5. $7(4 + 5)$   | 6. $10(5 + 7)$  |
| 7. $6(5 + 2)$   | 8. $5(4 + 9)$   | 9. $12(5 + 12)$ |
| 10. $3(6 + 7)$  | 11. $4(8 + 10)$ | 12. $8(6 + 15)$ |
| 13. $12(4 + 9)$ | 14. $16(3 + 8)$ | 15. $8(4 + 14)$ |

**4.5 Distributive Property**

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**Answers**

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|---------|--------|---------|---------|---------|
| 1. 36   | 2. 50  | 3. 207  | 4. 119  | 5. 104  |
| 6. 100  | 7. 91  | 8. 121  | 9. 156  | 10. 204 |
| 11. 160 | 12. 65 | 13. 196 | 14. 182 | 15. 180 |

**4.6 Mental Math to Evaluate Products**

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**Answers**

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|--------|---------|--------|--------|---------|---------|
| 1. 8   | 2. 15   | 3. 12  | 4. 24  | 5. 35   | 6. 20   |
| 7. 30  | 8. 20   | 9. 40  | 10. 56 | 11. 48  | 12. 72  |
| 13. 40 | 14. 108 | 15. 77 | 16. 72 | 17. 120 | 18. 144 |

**4.7 Distributive Property to Evaluate Formulas with Decimals**

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**Answers**

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|-----------|-----------|-----------|----------|-----------|
| 1. 35.2   | 2. 35     | 3. 7.5    | 4. 58.9  | 5. 71.5   |
| 6. 37.5   | 7. 98.4   | 8. 58     | 9. 52.5  | 10. 19    |
| 11. 19.25 | 12. 26.25 | 13. 48.96 | 14. 17.1 | 15. 37.45 |

**4.8 Area Models for Decimal Multiplication**

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**Answers**

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|----------------------|--------------------|---------------------|
| 1. 112.48 sq. m      | 2. 34.5 sq. m      | 3. 293.63 sq. ft.   |
| 4. 65.56 sq. m.      | 5. 153.75 sq. cm   | 6. 148.75 sq. ft.   |
| 7. 22.75 sq. in.     | 8. 116.85 sq. m    | 9. 202.5 sq. mm     |
| 10. 2,514.88 sq. ft. | 11. 8785.13 sq. m  | 12. 10971.9 sq. m   |
| 13. 4947.69 sq. m    | 14. 22882.12 sq. m | 15. 30639.94 sq. ft |

**4.9 Decimal Multiplication**

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**Answers**

1. .516	2. 7.82	3. .1904	4. 8.64	5. 17.55
6. .1288	7. .492	8. .38	9. .184	10. 4.2435
11. .3335	12. .801	13. .196	14. 24.15	15. 16.83
16. 16.948	17. 8.68	18. 9.86	19. 6.03	20. 6.1614
21. .1701	22. .041943	23. .05412	24. .094464	25. .68324

**4.10 Division of Decimals by Whole Numbers**

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**Answers**

1. 18.24	2. 1.8	3. 2.36	4. 6.21	5. 2.9
6. 5.63	7. 6.9	8. 3.7	9. 12.3	10. 3.87
11. 14.3	12. 36.2	13. 13.45	14. 23.14	15. 32.1

**4.11 Decimal Quotients Using Zero Placeholders**

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**Answers**

1. 3.5	2. 2.6	3. 3.2	4. 5.6	5. 3.6
6. 5.5	7. 2.3	8. 2.4	9. 3.3	10. 9.1
11. 5.2	12. 9.6	13. 5.2	14. 6.7	15. 5.2
16. 9.6	17. 9.4	18. 3.6	19. 3.2	20. 6.5

**4.12 Decimal Rounding and Division**

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**Answers**

1. .273	2. .423	3. .077	4. .116	5. .332
6. .031	7. .109	8. .051	9. .263	10. .038
11. .0309	12. .035	13. .076	14. .477	15. .214

**4.13 Mental Math to Multiply by Whole Number Powers of Ten**

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**Answers**

1. 34	2. 345	3. 5.6	4. 1,234	5. 8,790	6. 983.2
7. 7200	8. 125	9. 189.1	10. 165.7	11. 344	12. 34.67
13. 789	14. 340.2	15. 1.23	16. 3.456	17. 897.61	

**4.14 Mental Math to Multiply by Decimal Powers of Ten**

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**Answers**

1. .32	2. .00678	3. .2123	4. .000890
5. .5	6. .077	7. 1.2	8. 4.568
9. .008	10. .456	11. .08678	12. .16608
13. 2.2689	14. .013678	15. .045	16. 8.91

**4.15 Mental Math to Divide by Whole Number Powers of Ten**

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**Answers**

1. .34	2. .067	3. .891	4. 1.234	5. 6.789
6. .6789	7. 3210	8. .00568	9. .45	10. 2.35
11. .0679	12. .004545	13. .000457	14. .04457	15. 1.2345

**4.16 Mental Math to Divide by Decimal Powers of Ten**

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**Answers**

1. 67	2. 65.4	3. 21	4. 4320
5. 9.8765	6. 9.87	7. 4.5	8. .0098
9. .987	10. 67.3	11. 1,230	12. 456,000
13. 670	14. 770,000	15. 23,400	16. 1,899,000

**4.17 Scientific Notation Values**

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**Answers**

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|-------------------------|----------------------------|--------------------------|--------------------------|
| 1. $4.5 \times 10^{-4}$ | 2. $9.8 \times 10^{-2}$    | 3. $3.0 \times 10^7$     | 4. $9.87 \times 10^{-4}$ |
| 5. $3.4 \times 10^6$    | 6. $2.1 \times 10^{-6}$    | 7. $1.23 \times 10^{12}$ | 8. $3.45 \times 10^{-9}$ |
| 9. $5.6 \times 10^{-4}$ | 10. $9.8 \times 10^{-3}$   | 11. $2.4 \times 10^{-2}$ | 12. $2.3 \times 10^{-5}$ |
| 13. $4.3 \times 10^3$   | 14. $1.28 \times 10^{-11}$ | 15. $9.8 \times 10^2$    | 16. $4.5 \times 10^{-7}$ |

**4.18 Division of Decimal by Decimals**

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**Answers**

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|----------|----------|----------|----------|-------------------|
| 1. 3.4   | 2. 3.6   | 3. 2     | 4. 3.2   | 5. 2.31 (rounded) |
| 6. 1.3   | 7. 1.2   | 8. 2.3   | 9. 6.3   | 10. 2.3           |
| 11. 14.8 | 12. 18.9 | 13. 78.9 | 14. 82.3 | 15. 74.5          |

**4.19 Division of Decimals by Decimals Using Zero Placeholders**

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**Answers**

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|---------|---------|---------|-------|-------|-------|---------|
| 1. 4    | 2. 3    | 3. 3    | 4. 4  | 5. 6  | 6. 2  | 7. 3    |
| 8. 6    | 9. 5    | 10. 2   | 11. 6 | 12. 6 | 13. 9 | 14. 1.2 |
| 15. 2.5 | 16. 2.3 | 17. 2.2 |       |       |       |         |

**4.20 Equivalent Metric Units of Mass**

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**Answers**

- |           |              |                  |                  |
|-----------|--------------|------------------|------------------|
| 1. 5000 g | 2. 2 kg      | 3. 2.5 kg        | 4. 10,000 g      |
| 5. 2g     | 6. 30,000 mg | 7. 4.5 g         | 8. 6700 mg       |
| 9. 9000 g | 10. .01kg    | 11. 1,000,000 mg | 12. 5 g          |
| 13. 7.5 g | 14. 8.2 kg   | 15. 15,000 g     | 16. 1,600,000 mg |

**4.21 Equivalent Metric Units of Capacity**

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**Answers**

- |              |             |              |               |               |
|--------------|-------------|--------------|---------------|---------------|
| 1. 4.5 L     | 2. 6.9 L    | 3. 4.4 L     | 4. 5.2 L      | 5. 1.2 L      |
| 6. 1.8 L     | 7. 2.9 L    | 8. 1.3 L     | 9. 2.7 L      | 10. 3,000 mL  |
| 11. 5,500 mL | 12. 8000 mL | 13. 9,300 mL | 14. 34,500 mL | 15. 65,500 mL |

**4.22 Appropriate Metric Units of Mass or Capacity**

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**Answers**

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|------------|------------|-----------|-----------|------------|
| 1. kg      | 2. Mg      | 3. kg     | 4. grams  | 5. ounces  |
| 6. grams   | 7. Liters  | 8. Ounces | 9. Grams  | 10. liters |
| 11. liters | 12. Liters | 13. Kg    | 14. Grams | 15. Kg     |

**4.23 Conversions of Length, Mass, and Capacity in Metric Units**

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**Answers**

- |              |              |             |             |
|--------------|--------------|-------------|-------------|
| 1. 5,600 m   | 2. 8.9 km    | 3. 9.23 km  | 4. 400 mm   |
| 5. 500 cm    | 6. 5 m       | 7. 7,900 cm | 8. 9,900 cm |
| 9. 46,000 cm | 10. .34 m    | 11. 4,300 m | 12. .76 km  |
| 13. 4.3 km   | 14. 5 kg     | 15. .56L    | 16. 6.21 L  |
| 17. 8.9 L    | 18. 7,500 mL | 19. 500 mL  |             |