

4.5 MULTIPLICATION OF INTEGERS

There are three rules to follow whenever you multiply integers. The rules and examples of each are shown below.

1. The product of two positive integers is always positive.

$$(+3)(+6) = +18 \qquad (+5) \times (+4) = +20 \qquad (+8) \cdot (+7) = +56$$

2. The product of two negative integers is always positive.

$$(-6)(-5) = +30 \qquad (-4) \times (-9) = +36 \qquad (-2) \cdot (-8) = +16$$

3. The product of a positive integer and a negative integer is always negative.

$$(-9)(+3) = -27 \qquad (+7) \times (-4) = -28 \qquad (+6) \cdot (-8) = -48$$

A. Find the product of each of the following.

- | | | | |
|------------------|------------------|------------------|------------------|
| 1. $(+7)(+9)$ | 2. $(+8)(+6)$ | 3. $(+6)(0)$ | 4. $(+3)(+3)$ |
| 5. $(-2)(+4)$ | 6. $(-5)(+9)$ | 7. $(+9)(+2)$ | 8. $(-8)(0)$ |
| 9. $(+2)(-7)$ | 10. $(-4)(-5)$ | 11. $(-5)(+1)$ | 12. $(+7)(-6)$ |
| 13. $(-9)(-8)$ | 14. $(+5)(0)$ | 15. $(+3)(-4)$ | 16. $(-12)(-7)$ |
| 17. $(-15)(+8)$ | 18. $(+19)(-10)$ | 19. $(-20)(+9)$ | 20. $(-17)(+5)$ |
| 21. $(+25)(+3)$ | 22. $(-14)(-2)$ | 23. $(+16)(-4)$ | 24. $(-18)(+6)$ |
| 25. $(-23)(-8)$ | 26. $(+42)(+8)$ | 27. $(-15)(-5)$ | 28. $(-12)(+6)$ |
| 29. $(+10)(-7)$ | 30. $(-11)(-6)$ | 31. $(-43)(+20)$ | 32. $(-25)(-16)$ |
| 33. $(+15)(+18)$ | 34. $(+17)(-23)$ | 35. $(-19)(-35)$ | 36. $(-13)(+14)$ |
| 37. $(+14)(+17)$ | 38. $(-22)(+50)$ | 39. $(+33)(-30)$ | 40. $(-50)(+20)$ |
| 41. $(+46)(-72)$ | 42. $(-15)(+62)$ | 43. $(+35)(-15)$ | 44. $(-70)(-18)$ |
| 45. $(-80)(+9)$ | 46. $(-9)(+3)$ | 47. $(+12)(-9)$ | 48. $(-14)(+8)$ |
| 49. $(+7)(+4)$ | 50. $(-8)(+5)$ | 51. $(-16)(+7)$ | 52. $(-15)(+9)$ |
| 53. $(-20)(-3)$ | 54. $(+30)(+6)$ | 55. $(-21)(+16)$ | 56. $(-14)(-10)$ |
| 57. $(-15)(+15)$ | 58. $(+17)(-17)$ | 59. $(-12)(-12)$ | 60. $(+13)(+13)$ |

B. Complete the following.

1. A positive times a positive = _____ and a negative times a negative = _____
2. A positive times a negative = _____ and a negative times a positive = _____
3. When multiplying and the signs are the same, the answer is always _____
4. When multiplying and the signs are different, the answer is always _____

4.6 DIVISION OF INTEGERS

As in multiplication, there are also three rules to follow whenever you divide integers. The rules and examples are shown below.

1. The quotient of two positive integers is always positive.

$$(+14) \div (+7) = +2$$

$$(+27) \div (+3) = +9$$

2. The quotient of two negative integers is always positive.

$$(-42) \div (-7) = +6$$

$$(-36) \div (-9) = +4$$

3. The quotient of a positive integer and a negative integer is always negative.

$$(-56) \div (+7) = -8$$

$$(+48) \div (-8) = -6$$

A. Find the quotient of each of the following.

- | | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|
| 1. $(+15) \div (+5)$ | 2. $(+25) \div (+5)$ | 3. $(+63) \div (-9)$ | 4. $(-80) \div (-16)$ |
| 5. $(-64) \div (+16)$ | 6. $(+56) \div (-8)$ | 7. $(-34) \div (+17)$ | 8. $(+18) \div (-3)$ |
| 9. $(-32) \div (+4)$ | 10. $(+55) \div (-11)$ | 11. $(-48) \div (-12)$ | 12. $(-44) \div (+11)$ |
| 13. $(-55) \div (-11)$ | 14. $(+72) \div (+9)$ | 15. $(+121) \div (-11)$ | 16. $(-169) \div (-13)$ |
| 17. $(+144) \div (+4)$ | 18. $(-25) \div (+5)$ | 19. $(+36) \div (-3)$ | 20. $(-18) \div (-9)$ |
| 21. $(-100) \div (+20)$ | 22. $(-124) \div (+31)$ | 23. $(-300) \div (-20)$ | 24. $(-90) \div (+45)$ |
| 25. $(+38) \div (-2)$ | 26. $(+52) \div (+13)$ | 27. $(-19) \div (-19)$ | 28. $(+63) \div (+7)$ |
| 29. $(-35) \div (+7)$ | 30. $(-55) \div (-5)$ | 31. $(+110) \div (-10)$ | 32. $(+35) \div (+7)$ |
| 33. $(-42) \div (-7)$ | 34. $(-81) \div (+3)$ | 35. $(+65) \div (-5)$ | 36. $(-63) \div (-7)$ |
| 37. $(-100) \div (+20)$ | 38. $(+24) \div (-2)$ | 39. $(-48) \div (-12)$ | 40. $(-108) \div (+9)$ |
| 41. $(+150) \div (-3)$ | 42. $(+160) \div (-8)$ | 43. $(-84) \div (+6)$ | 44. $(-90) \div (-5)$ |
| 45. $(+36) \div (+3)$ | 46. $(-62) \div (-2)$ | 47. $(+88) \div (-4)$ | 48. $(-95) \div (+5)$ |
| 49. $(-16) \div (-2)$ | 50. $(+200) \div (+10)$ | 51. $(+250) \div (-5)$ | 52. $(-320) \div (+8)$ |
| 53. $(-180) \div (-6)$ | 54. $(+42) \div (+7)$ | 55. $(-16) \div (+2)$ | 56. $(+24) \div (+3)$ |
| 57. $(-76) \div (-4)$ | 58. $(+68) \div (+17)$ | 59. $(-92) \div (+4)$ | 60. $(-6) \div (+6)$ |

B. Complete the following.

1. A positive integer divided by a positive integer = _____
2. A negative integer divided by a negative integer = _____
3. When dividing and the signs are different the answer is always _____
4. When dividing and the signs are the same the answer is always _____