

MULTIPLICATION OF INTEGERS

Name: _____

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.

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

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

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

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

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

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 _____

Find the product of each of the following. (At #31 start showing your work)

- | | | | |
|-----------------|------------------|------------------|------------------|
| 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. $(+13)(+13)$

NAME _____

Division of Integers

When dividing integers apply the same rules as the rules for multiplication.

(a) A positive numeral divided by a positive numeral gives a positive quotient.

$$+20 \div +5 = +4$$

(b) A negative numeral divided by a negative numeral gives a positive quotient.

$$-20 \div -5 = +4$$

(c) A negative numeral divided by a positive numeral gives a negative quotient; likewise a positive numeral divided by a negative numeral gives a negative quotient.

$$-20 \div +5 = -4$$

and

$$+20 \div -5 = -4$$

First determine the value of the quotient by dividing the numerals, then determine the proper sign by following the above rules.

Solve the following:

- | | |
|------------------------------|------------------------------|
| 1. $+20 \div +5 =$ _____ | 18. $-48 \div -6 =$ _____ |
| 2. $-30 \div +5 =$ _____ | 19. $-48 \div +6 =$ _____ |
| 3. $+40 \div -4 =$ _____ | 20. $+54 \div -9 =$ _____ |
| 4. $+55 \div -5 =$ _____ | 21. $+66 \div +6 =$ _____ |
| 5. $-25 \div -5 =$ _____ | 22. $-49 \div -7 =$ _____ |
| 6. $+27 \div +9 =$ _____ | 23. $-68 \div +2 =$ _____ |
| 7. $+35 \div -5 =$ _____ | 24. $+24 \div -8 =$ _____ |
| 8. $-84 \div +2 =$ _____ | 25. $+36 \div +3 =$ _____ |
| 9. $+24 \div -6 =$ _____ | 26. $-52 \div -4 =$ _____ |
| 10. $-36 \div -9 =$ _____ | 27. $+88 \div -4 =$ _____ |
| 11. $-500 \div +50 =$ _____ | 28. $750 \div -75 =$ _____ |
| 12. $-200 \div -20 =$ _____ | 29. $-250 \div -10 =$ _____ |
| 13. $550 \div -11 =$ _____ | 30. $1000 \div -100 =$ _____ |
| 14. $-660 \div -11 =$ _____ | 31. $-350 \div -35 =$ _____ |
| 15. $-225 \div -25 =$ _____ | 32. $90 \div -15 =$ _____ |
| 16. $850 \div +50 =$ _____ | 33. $-75 \div +25 =$ _____ |
| 17. $-900 \div +100 =$ _____ | 34. $250 \div +10 =$ _____ |

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4.6 DIVISION OF INTEGERS

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 _____

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. $(-6) \div (+6)$ |

What did ZORNA say when she married a 3-foot pygmy?

Do any exercise below and find your answer in one of the boxes at the bottom of the page. Write the letter of the exercise in that box. The answers are arranged in order from smallest to largest. Keep working and you will discover the answer to the title question.

E $\frac{36}{-2} =$
 O $\frac{-50}{-2} =$
 A $\frac{100}{-4} =$
 D $\frac{-670}{-10} =$
 E $\frac{9100}{-100} =$
 S $\frac{-45}{3} =$
 A $\frac{600}{4} =$

A $-12 \div 4 =$
 E $60 \div 15 =$
 T $45 \div -9 =$
 A $-48 \div -4 =$
 R $-49 \div -7 =$
 A $-3 \div -3 =$
 E $-60 \div 5 =$
 O $-200 \div 4 =$
 A $-90 \div 9 =$
 H $0 \div -7 =$
 D $77 \div -7 =$
 E $-215 \div 1 =$
 T $96 \div 12 =$
 E $-75 \div -5 =$
 O $56 \div -8 =$

V $\frac{39}{3} =$
 O $\frac{-54}{-6} =$
 L $\frac{311}{1} =$
 N $\frac{38}{-19} =$
 V $\frac{-63}{3} =$
 T $\frac{300}{-2} =$
 H $\frac{1000}{100} =$

A $750 \div 10 =$
 E $-42 \div -7 =$
 R $-150 \div 2 =$
 E $-100 \div -2 =$
 T $67 \div -1 =$
 N $-80 \div -40 =$
 H $150 \div -5 =$
 R $-30 \div 5 =$
 T $1700 \div -10 =$
 V $100 \div 20 =$
 T $13 \div -13 =$
 V $120 \div 4 =$
 M $-100 \div 25 =$
 V $-42 \div 3 =$
 L $80 \div 5 =$

B $\frac{3110}{-10} =$
 N $\frac{900}{300} =$
 S $\frac{81}{-9} =$
 L $\frac{-430}{-2} =$
 H $\frac{-48}{6} =$
 L $\frac{-48}{3} =$
 T $\frac{-91}{-1} =$

-311	-215	-170	-150	-91	-75	-67	-50	-30	-25	-21	-18	-16	-15	-14	-12	-11	-10	-9	-8	-7	-6	-5					
-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	12	13	15	16	25	30	50	67	75	91	150	215	311