

1. Determine if the number is divisible by 2, 3, 4, 5, 6, 8, 9, 10, and/or 12.

11,800

2. Find the prime factorization of the composite number.

994

$$2 \times 497$$

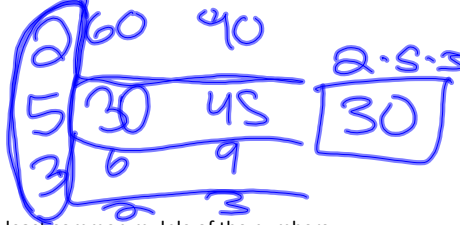
$$\quad \quad \quad \uparrow$$

$$\quad \quad \quad 7 \cdot 71$$

$$\quad \quad \quad \textcircled{2 \times 7 \times 71}$$

3. Find the greatest common divisor of the numbers.

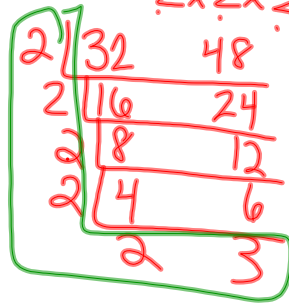
60, 90



4. Find the least common multiple of the numbers.

32 and 48

$$2 \times 2 \times 2 \times 2 \times 2 \times 3 = 96$$



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5. Graph the integer on the number line.

-4



6. Insert  $<$  or  $>$  in the area between the integers to make the statement true.

-3  $>$  -4

7. Find the absolute value.

$$|-300,000|$$

300,000

8. Perform the indicated operation.

$$4 + (-3) = 1$$

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9. Evaluate

$$(-4)^3 \quad 4 \cdot 4 \cdot 4 = 64$$

Use the order of opera

10.  $6 + 3 \cdot 8$        $4 + 24 = 30$

11.  $5 - 2(-2 + 6)$        $5 - \frac{2 \cdot 4}{5 - 8} = -3$

12.  $4(5 - 3)^3 - 2(6 - 4)^3$   
 $4(2)^3 - 2(2)^3$   
 $4(8) \quad 2(8)$   
 $32 - 16 = 16$

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13. Reduce the raonal number to its lowest terms.

$$\frac{238}{266} \div \frac{14}{14} = \frac{17}{19}$$

14. Convert the mixed number to an improper fracon.

$$2\frac{5}{7} \times 7 \quad 19/7$$

15. Convert the improper fracon to a mixed number.


$$\frac{14}{5} \quad 5\frac{4}{5} \quad 2\frac{4}{5}$$

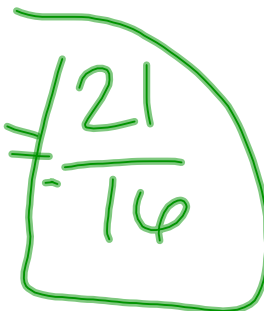
Perform the indicated operaoon(s). Where possible, reduce the answer to the lowest terms.


16.  $\frac{1}{6} \cdot \frac{1}{3} = \frac{1}{18}$

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Perform the indicated operation(s). Where possible, reduce the answer to the lowest terms.

17.  $\frac{1}{7} + \frac{3}{7}$  

18.  $-\frac{3}{4} \div \frac{4}{7} = -\frac{3}{4} \times \frac{7}{4} = -\frac{21}{16}$  

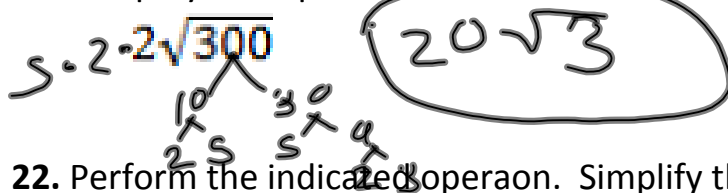
19.  $(\frac{1}{2} + \frac{1}{3}) \div (\frac{1}{2} + \frac{1}{6}) = \frac{5}{4}$  

20. Evaluate


$\sqrt{36}$   
6 

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21. Simplify the square root.

$5 \cdot 2 \cdot 2 \sqrt{300}$  

22. Perform the indicated operation. Simplify the answer when possible.

$\frac{\sqrt{80}}{\sqrt{5}} = 4$  

23. Multiply and simplify. Assume that all variables represent real numbers.

$\sqrt{2} \cdot \sqrt{4} = 2\sqrt{2}$  

24. Perform the indicated operation. Simplify the answer when possible.

$\sqrt{2} + \sqrt{8} = 3\sqrt{2}$  

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25. List all numbers from the set that are natural numbers.

$$\left\{-6, -\frac{1}{6}, 0, 0.14, \sqrt{15}, 9.8, \sqrt{36}\right\}$$

$$\circ \sqrt{36} = 6$$

26. Complete the statement to illustrate the commutative property.

$$4 + (3 + 5) = 4 + (5 + \underline{3})$$

27. State the name of the property illustrated.

$$8(-5 + 7) = -40 + 56$$

*Distributive prop*

28. Use the properties of exponents to simplify the expression. First express the answer in exponential form. Then, evaluate the expression.

$$3^8 \cdot 3^2 = 3^{10} \approx 59049$$

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29. Use the zero and negative exponent rules to simplify the expression.

$$4^{-2} = \frac{1}{16}$$

30. Express the number in decimal notation.

$$4.16 \times 10^{-4}$$

$$.000416$$

31. Express the number in scientific notation.

110,000

$$1.1 \times 10^5$$

32. Perform the indicated operation and express the answer in decimal notation.

$$(9.3 \times 10^7)(3 \times 10^{-4})$$

$$2.79 \times 10^4$$

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33. Write the first six terms of the arithmetic sequence with the first term,  $a_1$ , and common difference,  $d$ .

$$a_1 = 10; d = 5$$

10, 15, 20, 25, 30, 35

34. Find the indicated term for the arithmetic sequence with the first term,  $a_1$ , and common difference,  $d$ .

Find  $a_8$ , when  $a_1 = 8, d = -4$

$$a_8 = 20$$

35. Write the first six terms of the geometric sequence with the first term,  $a_1$ , and common ratio  $r$ .

$$a_1 = 4; r = 2$$

4, 8, 16, 32, 64, 128

36. Find the indicated term for the geometric sequence with the first term,  $a_1$ , and common ratio  $r$ .

Find  $a_5$ , when  $a_1 = 8, r = 3$ .

$$a_5 = 8 \cdot 3^{5-1}$$

$$a_5 = 8 \cdot 3^4$$

$$a_5 = 8 \cdot 81$$

$$a_5 = 648$$

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37. Evaluate the algebraic expression for the given value or values of the variable.

$$-9x + 1; x = -4$$

$$-9(-4) + 1 = 37$$

38. Use the distributive property to write the expression without parentheses. Then, simplify if necessary.

$$4(2x + 2)$$

$$8x + 8$$

39. Simplify the algebraic expression.

$$-5(10x + 8) + 3(10x + 4)$$

$$-50x - 40 + 30x + 12$$

$$-20x - 28$$

40. Solve the equation. Be sure to check your proposed solution by substituting it for the variable in the given equation.

$$-9y - 5 = 8 + 6y$$

$$\begin{array}{r} -9y \\ +9y \\ \hline \end{array}$$

$$-5 = 8 + 6y$$

$$+9y$$

$$-5 = 8 + 15y$$

$$-2 = 15y$$

$$\frac{-2}{15} = \frac{15y}{15}$$

$$-2/15 = y$$

|

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41. Indicate whether the equation has no solution or is true for all real numbers. If neither is the case solve for the variable.

$$10x - 5(4 + 2x) = 20$$

$$\cancel{10x} - 20 - \cancel{10x} = 20 \rightarrow -20 = 20 \text{ No Solution}$$

42. Let x represent the number. Use the given coordinates to write an

A number decreased by 218 is equal to 551. Find the number.

$$x - 218 = 551 \rightarrow x = 769$$

43. In a championship basketball game, the winning and losing scores are consecutive integers. If the sum of the scores was 182, what were the scores?

$$90.5 \frac{1}{2} \\ 91.5$$

44.  $\frac{x-5}{4} = \frac{3}{20}$

$$12 = 20x - 100 \\ 112 = 20x$$

$$x = 5.6$$

45. Solve the inequality and graph the solution set.

$$4x \leq 56$$

$$\overline{4} \overline{4} \\ x \leq 14$$

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46. Use FOIL to find the product.

$$(x + 2)(x + 7) = x^2 + 7x + 2x + 14 = x^2 + 9x + 14$$

Factor the trinomial, or state that the trinomial is prime.

47.  $x^2 - x - 30 = (x - 6)(x + 5)$

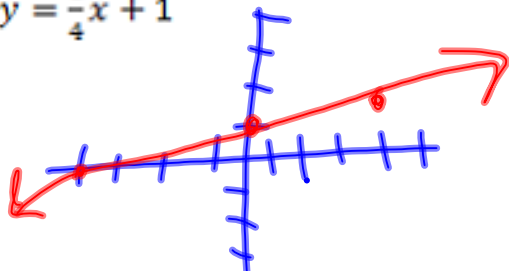
48.  $7x^2 + 78x + 11 = (x + 11)(7x + 1)$

49. Solve the equation by using the quadratic formula.

$$x^2 + 5x - 10 = 0 \quad \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-5 \pm \sqrt{5^2 - 4(1)(-10)}}{2 \cdot 1}$$

50. Graph the equation.

$$y = \frac{1}{4}x + 1$$



$$\frac{-5 \pm \sqrt{25 + 40}}{2} \\ \frac{-5 \pm \sqrt{65}}{2}$$

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