Find the value of the exponential expression.
1) \[ \left( \frac{5}{6} \right)^3 = \frac{5}{6} \cdot \frac{5}{6} \cdot \frac{5}{6} = \frac{125}{216} \]
2) \((0.3)^2 = (0.3)(0.3) = 0.09\]

Simplify.
3) \(73 - 2 \cdot 4 \cdot 6 = 73 - 48 = 25\)
4) \(6^3 + 9 - 6 = 216 + 9 - 6 = 219 - 6 = 18\)

Find the value of the expression.
5) \(9[3 + 8(9)] = 9[3 + 72] = 9 \cdot 75 = 675\)
6) \(\left( \frac{4}{5} + \frac{2}{5} \right) \cdot \frac{2}{12} = \frac{6}{5} \cdot \frac{2}{12} = \frac{12}{5 \cdot 12} = \frac{1}{5}\)
7) \(\frac{5(2 + 1) - 6(1 + 1)}{5(4 - 2) - 23} = \frac{5(3) - 6(2)}{5(2) - 8} = \frac{15 - 12}{10 - 8} = \frac{3}{2}\)

Find the numerical value of the expression for a) \(x = 4\) and b) \(x = 18\).
8) \(8x^2 + 7x = 8(4)^2 + 7(4) = 8(16) + 7(4) = 128 + 28 = 156\)
   \(8(18)^2 + 7(18) = 8(324) + 7(18) = 2592 + 126 = 2718\)

Evaluate the expression for the given values. If necessary, round to the nearest tenth.
9) \(\frac{x(y + 14)}{2(x - y)} = \frac{7(6 + 14)}{2(7 - 6)} = \frac{7(20)}{2(1)} = \frac{140}{2} = 70\)

State the phrase as a mathematical expression. Use \(x\) to represent the variable.
10) The difference between twelve times a number and five \(12x - 5\)
11) Six times a number, added to 20 \(6x + 20\)

Change the word statement to an equation. Use \(x\) as the variable.
12) 4 times a number equals 4 less than 5 times the number. \(4x = 5x - 4\)
13) The sum of two-thirds a number and 5 is 14. \(\frac{2}{3}x + 5 = 14\)

Simplify the expression.
14) \(-5 - (2 - 6t) = -5 - 2 + 6t = 6t - 7\)
Simplify the expression by combining like terms.
15) \(-2(9x + 5) - (2x + 7) - 6x + 12\)
\[\begin{align*}
-18x & - 10 - 2x - 7 - 6x + 12 \\
-10x & - 2x - 6x - 10 - 7 + 12
\end{align*}\]
\[-26x - 5\]

Solve the equation.
16) \(4x + 8 + 5x + 2 = -5x + 14x - 2\)
\[\begin{align*}
x + 10 & = 9x - 2 \\
-10 & = -2x \\
\end{align*}\]
\(-2x = -12\)
\(x = 6\)

17) \(9(k - 1) - (8k + 4) = -6\)
\[\begin{align*}
9k & - 9 - 8k - 4 = -6 \\
-k & = -13 \\
\end{align*}\]
\(k = 13\)

18) \(3(5x + 3) + 2(4 + 8x) = (15x + 5) - 6\)
\[\begin{align*}
15x + 9 + 8x & = 30x + 10 - 6 \\
23x & = 24 \\
\end{align*}\]
\(x = 6\)

19) \(\frac{1}{3}(x - 2) + \frac{5}{6}(x - 4) = x - 3\)
\[\begin{align*}
\frac{1}{3}x & - \frac{2}{3} + \frac{5}{6}x - \frac{10}{6} = x - 3 \\
\frac{7}{6}x - \frac{2}{3} & = x - 3 \\
\frac{7}{6}x - \frac{2}{3} & = x - 3 \\
\end{align*}\]
\(x = 6\)

Solve the problem. You must write an equation and solve.
20) If \(-2\) is added to a number and the sum is doubled, the result is 6 less than the number.
Find the number.
\[\frac{2(x + (-2)) - 6}{2x + 4} = x - (-6)\]
\(x = -2\)

21) The sum of three consecutive odd integers is 207. Find the integers.
\(x + x + 2 + x + 4 = 207\)
\(3x + 6 = 207\)
\(x = 69\)

Solve the formula for the specified variable.
22) \(A = \frac{4}{3}h(b_1 + b_2)\) for \(b_2\)
\[\begin{align*}
\frac{4A}{3} & = \frac{4}{3}h(b_1 + b_2) \\
\frac{4A}{3} & = \frac{4}{3}h\left(h (b_1 + b_2)\right) \\
x & = 201 \\
\end{align*}\]

23) \(A = P(1 + nr)\) for \(r\)
\[\begin{align*}
\frac{4A}{3h} & = b_1 + b_2 \\
\frac{4A}{3h} & = b_1 + b_2 - b_1 \\
\frac{A}{3h} - b_1 & = b_2 \\
\end{align*}\]

Solve the inequality, then graph the solution. Write the interval solution.
24) \(\frac{5}{21}(x + 1) > \frac{1}{7}(x + 7)\)
\[\begin{align*}
\frac{5}{21}x + \frac{5}{21} & > \frac{1}{7}x + \frac{7}{7} \\
\frac{5}{21}x & > x + 1 \\
\frac{5}{21}x - x & > 1 \\
\frac{5}{21}x - x & > 1 \\
\end{align*}\]
\(x > 14\)

25) \(4(x - 4) + 36x < 6(7x - 5) - 3x\)
\[\begin{align*}
4x - 16 + 36x & < 42x - 30 - 3x \\
10x - 16 & < 39x - 30 \\
-29x + 16 & < 39x + 16 \\
-3x & > x \\
\end{align*}\]
\(x < -14\)