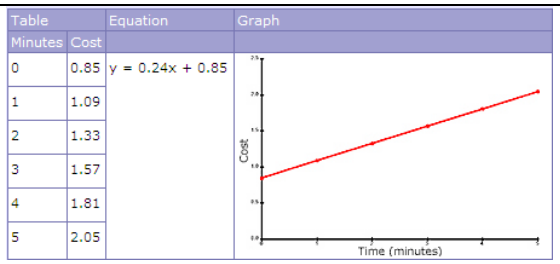
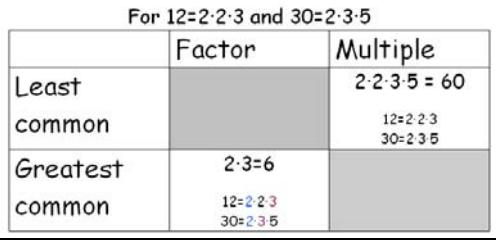
Fifth Grade Core Mathematics Vocabulary

1	Acute angle	An angle whose measure is less than 90°. [repeated from 3rd grade]
2	Base (numeration)	1. When a number is raised to a power, the number that is used as a factor is the base. Example: In 3^5, 3 is the base. 2. A face of a three-dimensional polyhedron by which the figure is measured or classified. [repeated from 4th grade] 3. When working with cylinders or cones, base refers to one of the circles on which the cylinder or cone can stand. [repeated from 4th grade]
3	Cancel	When the numerator and denominator of a fraction have a common factor, this factor equals one and can thus be factored out of both the numerator and denominator. This process is often referred to as "canceling", although a more transparent phrase might be "factoring out 1". Example: $\frac{6}{5}\bullet\frac{5}{7}=\frac{6\bullet 5}{5\bullet 7}=\frac{5\bullet 6}{5\bullet 7}=\frac{6}{7}$ or $\frac{6}{\cancel{5}}\bullet\frac{\cancel{5}}{7}=\frac{6}{7}$ (Note to teachers - because students will be learning the "cross-multiply" algorithm in the next year or so, it is better to not refer to this as "cross-cancel". The two terms are easily confused by students, and their actions are also confused.)
4	Coordinate	A number that determines the position of a point in one direction on a grid. Example: For the point (3, 5), 3 is the x-coordinate and 5 is the y-coordinate.
5	Coordinate plane	A plane formed by the intersection of a horizontal number line called the x-axis and a vertical number line called the y-axis.
6	Degree	1) A unit for measuring angles. [repeated from 3rd grade] 2) A unit for measuring temperature. [repeated from 3rd grade]
7	Distributive property of multiplication over addition	A property of real numbers stating that $a \cdot (b+c) = (a \cdot b) + (a \cdot c)$ Example: $3 \cdot (40 + 5) = (3 \cdot 40) + (3 \cdot 5)$
8	Equivalent	Representing the same number or amount. Example: $\frac{3}{4}$ and $\frac{6}{8}$ are equivalent fractions. Example: 2n + 3n and 5n are equivalent expressions.
9	Evaluate	To find the value of a numerical or algebraic expression.

	Numeric	Algebraic
Evaluate		3x + 5 , when x=7 3·7+5 26
Simplify	3+4+7 14 $\frac{9}{15}=\frac{3}{5}$	3x + 1 + 2x + 5 5x + 6
Solve	3+4+7=14 *(Note - by 6th or 7th grade, this use of "solve" will no longer be used.)*	3x + 2 = 14 x = 4

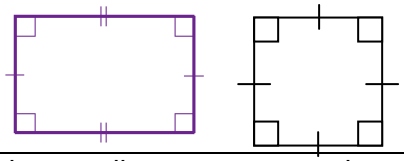
10	Even number	Any integer that can be divided exactly by 2. Example: -24, 0, 6 and 138 are all even numbers (Note to teachers – this is an expanded definition of that presented in 2nd grade. The 2nd grade definition works well when thinking about positive even numbers, but does not extend well to negative even numbers.)
11	Exponent	A numeral written above and to the right of another numeral to indicate how many times the original number is used as a factor. Example: The exponent "3" in 4^3 means 4 is a factor 3 times, 4 x 4 x 4.
12	Fraction	1. Part of a group or whole: A way of representing a part of a whole or part of a group by telling the number of equal parts in the whole and the number of those parts you are describing; it is written in the form $\frac{\text{numerator}}{\text{denominator}}$, where the denominator represents the number of equal parts in the whole or group, and the numerator represents the number of parts you are describing. 2. Fair share: A number written with the numerator telling you how many wholes are being shared, and the denominator telling how many ways the wholes are being equally shared. Example: If 3 people are fair sharing 2 sandwiches, each person will get $\frac{2}{3}$ of a sandwich. 3. A number expressed as a quotient, in which a numerator is divided by a denominator. [Expanded from 2nd grade definition]
13	Function	A relation in which every input (domain) value is paired with exactly one output (range) value. Functions can be represented in many different ways, including ordered pairs, tables, graphs, equations, and words.  Table / Equation / Graph Minutes / Cost 0 0.85 1 1.09 2 1.33 3 1.57 4 1.81 5 2.05 y = 0.24x + 0.85 Cost Time (minutes)
14	Greatest common factor (closely related to greatest common denominator)	The largest factor of two or more numbers. Example: to find the greatest common factor of 24 and 36 factors of 24 5 {1, 2, 3, 4, 6, 8, 12, 24} factors of 36 5 {1, 2, 3, 4, 6, 9, 12, 18, 36} common factors of 24 and 36 are {1, 2, 3, 4, 6, 12}, the largest being 12 12 is the greatest common factor of 24 and 36 (Note to teachers – please be sure to use the complete phrase, rather than the abbreviation (GCF), until you are <u>sure</u> your students are confident with this concept and phrase.)  For 12=2·2·3 and 30=2·3·5 Factor / Multiple Least common: Multiple: 2·2·3·5 = 60 (12=2·2·3, 30=2·3·5) Greatest common: Factor: 2·3=6 (12=2·2·3, 30=2·3·5)

<table>
<tr><td>15</td><td>Improper (common) fraction</td><td>A fraction whose numerator is greater than or equal to the denominator.
Example: $\frac{4}{3}$
(Note to teachers - please have students leave at least some of their fractions in this form; in pre-algebra and beyond, mixed number answers are discouraged, except for some word problem situations.)</td></tr>
<tr><td>16</td><td>Integers (+/-)</td><td>The counting numbers (1, 2, 3,...), their opposites (-1, -2, -3,...), and zero</td></tr>
<tr><td>17</td><td>Least common multiple (closely related to least common denominator)</td><td>The smallest number, besides zero, that is a multiple of a set of two or more numbers.

(Note to teachers – please be sure to use the complete phrase, rather than the abbreviation (LCM or LCD), until you are <u>sure</u> your students are confident with this concept and phrase.)
For 12=2·2·3 and 30=2·3·5
<table><tr><td></td><td>Factor</td><td>Multiple</td></tr><tr><td>Least common</td><td></td><td>2·2·3·5 = 60
12=2·2·3
30=2·3·5</td></tr><tr><td>Greatest common</td><td>2·3=6
12=2·2·3
30=2·3·5</td><td></td></tr></table>
Example: to find the least common multiple of 4 and 12
multiples of 4 = {0, 4, 8, 12, 16,…}
multiples of 12 = {0, 12, 24, 36,…}
The lowest common number besides 0 in both sets is 12, so the LCM of 4 and 12 is 12.

Note to teachers - in addition to teaching students the listing strategy shown above, be <u>sure</u> they are also confident using the prime factorization strategy shown in the table above. This is an extremely important understanding/skill for algebra.)</td></tr>
<tr><td>18</td><td>Mean (average)</td><td>The mean is the size of each of n equal groups made from n data values. The mean can be found by adding the values in a a set of data and dividing by the number of such values.
For the data values of 8, 12, 7, 9, 3, 0, 3
<table><tr><td>Mean</td><td>(8+12+7+9+3+0+3)/7 = 6</td></tr><tr><td>Median</td><td>0, 3, 3, 7, 8, 9, 12 (the middle value is 7)</td></tr><tr><td>Mode</td><td>3 (the most often occurring value is 3)</td></tr><tr><td>Range</td><td>12 – 0 = 12 (the difference between the smallest and largest data values)</td></tr></table></td></tr>
<tr><td>19</td><td>Mixed number</td><td>A number represented by a whole number and a fraction.</td></tr>
<tr><td>20</td><td>Obtuse angle</td><td>An angle greater than a right angle (90^o) and less than a straight angle (180^o).</td></tr>
<tr><td>21</td><td>Odd number</td><td>Any integer that cannot be divided exactly by 2.
Example: 9, 1, -7, and -245 are odd numbers.

(Note to teachers – this is an expanded definition of that presented in 2nd grade. The 2nd grade definition works well when thinking about positive odd numbers, but does not extend well to negative odd numbers.)</td></tr>
</table>

22	Ordered pair	A pair of numbers that shows the position of a point on a coordinate grid. Example: (3, 5)
23	Order of operations	A set of rules that states the order in which operations should be done. 1. Compute inside parentheses and other grouping symbols first. 2. Simplify all exponents 2. Multiply and divide from left to right. 3. Add and subtract from left to right P E MD AS
24	Origin	The point (0,0) on a two-dimensional coordinate grid.
25	Parallelogram	A quadrilateral with both pairs of opposite sides parallel.
26	Prime factorization	A number written as the product of its prime factors. Example: $24 = 2 \cdot 2 \cdot 2 \cdot 3$
27	Prime number	A number greater than 1 that has exactly two different factors (1 and itself). Examples of prime numbers are 2, 7, and 13. The only factor pair of 7 is 1 and 7. Important Note – 1 is **not** a prime number.
28	Quadrant	1. Any quarter of a plane divided by an x and y axis. 2. A quarter of a circle or of the circumference of a circle. 
29	Quadrilateral	A two-dimensional polygon with four sides.
30	Rectangle	A parallelogram with four right angles. 
31	Simplify	1. To rewrite a fraction as an equivalent fraction with a smaller numerator and denominator. 2. To rewrite a numeric or algebraic expression with an equivalent expression that is simpler than the original. This usually means that the simplified expression is smaller than the original.
32	Solve	To find an answer or solution to a problem (see table just above).

	Numeric	Algebraic
Evaluate		$3x + 5$, when $x=7$ $3 \cdot 7 + 5$ 26
Simplify	$3+4+7$ 14 $\frac{9}{15} = \frac{3}{5}$	$3x + 1 + 2x + 5$ $5x + 6$
Solve	$3+4+7=14$ *(Note - by 6th or 7th grade, this use of "solve" will no longer be used.)*	$3x + 2 = 14$ $x = 4$

<table>
<tr><td>33</td><td>Square Number
(also Perfect Square)</td><td>The product of a whole number and itself.
Example: 16 is a perfect square because it is 4·4
<table>
<tr><td>Square (noun)</td><td>A rectangle with four equal sides.  </td></tr>
<tr><td>Square (verb)</td><td>To multiply a quantity by itself.
Examples: Square 3 → 3·3 = 3^2 = 9
Square x+2 → $(x+1)^2 = x^2 + 2x + 1$
 
Make a square with side lengths of 3
 
Make a square with side lengths of x+1</td></tr>
<tr><td>Square Number
Perfect Square</td><td>The product of a whole number and itself.
16 is a perfect square because it is 4·4
  </td></tr>
<tr><td>Square Root</td><td>The square root of a number is that special value that, when multiplied by itself, gives the number.
4·4 = 16, so the square root of 16 is 4.
The symbol is √
√36 = 6 (because 6·6 = 36)</td></tr>
</table></td></tr>
<tr><td>34</td><td>Surface area</td><td>The total area of the two-dimensional surfaces around the outside of a three-dimensional figure.</td></tr>
<tr><td>35</td><td>Triangle</td><td>A polygon with three sides.</td></tr>
<tr><td>36</td><td>Unit
(of measurement)</td><td>A quantity used as a standard of measurement.
Example: Units of time are second, minute, hour, day, week, month, year and decade.
<table>
<tr><td>Unit of measurement</td><td>A quantity used as a standard of measurement.</td></tr>
<tr><td>Unit fraction</td><td>A fraction that is one equal part of a whole ($\frac{1}{3}$).</td></tr>
<tr><td>Units</td><td>How many ones; how many single items.</td></tr>
</table></td></tr>
<tr><td>37</td><td>Variable</td><td>A letter or symbol that represents a number.</td></tr>
<tr><td>38</td><td>Volume</td><td>The measure of the amount of space occupied by a 3-dimensional object.</td></tr>
<tr><td>39</td><td>x-axis</td><td>The horizontal axis of a two-dimensional coordinate grid.</td></tr>
<tr><td>40</td><td>y-axis</td><td>The vertical axis of a two-dimensional coordinate grid.</td></tr>
</table>

<u>Additional 5th Grade CST Vocabulary</u>
approximate
Display
Identifies
Median
Pattern
Percent
Represented/Represents
Value