

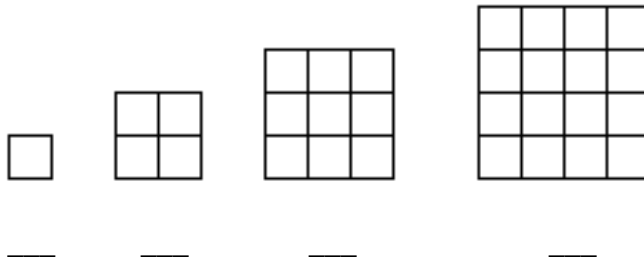
SUPERSTARS III

Saturn, XIX

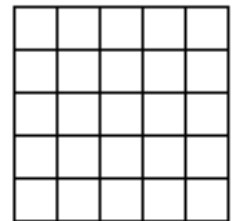
NAME: _____

(This shows my own thinking.)

- ★★★★ 1. How many different squares are in each figure? Count the smallest squares first, then move up to the next size, and so on. Record the total number of squares below each figure and look for a pattern.

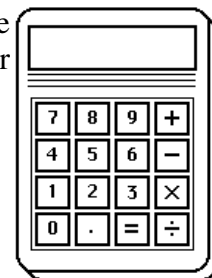


- ★★ 2. Herman thought he noticed a pattern to the problem above. The total number of squares is always the sum of the square numbers up to the figure number. For the 3rd figure, for example, the total number of squares is 14, which is also $1^2 + 2^2 + 3^2$.



- a. Does this pattern work for the next figure, the 5th? _____
 b. What is the total number of squares in the 10th figure? _____

- ★ 3. Aki bought a new calculator for school. What is the cost of the calculator including sales tax of 6%? Round your answer up to the next cent, as a store would.



Answer: _____

- ★★★★ 4. Complete the chart below by putting a check in each column by which the number is divisible. You may have more than one number checked in each row or column. The first one is started for you.

	2	3	4	5
a. 6,945		✓		
b. 1,236,240				
c. 54,208				

- ★ 5. Draw the other half of the shape to make it symmetrical. If it helps you, fold the page along the vertical *line of symmetry*, hold it up to the light, and trace.



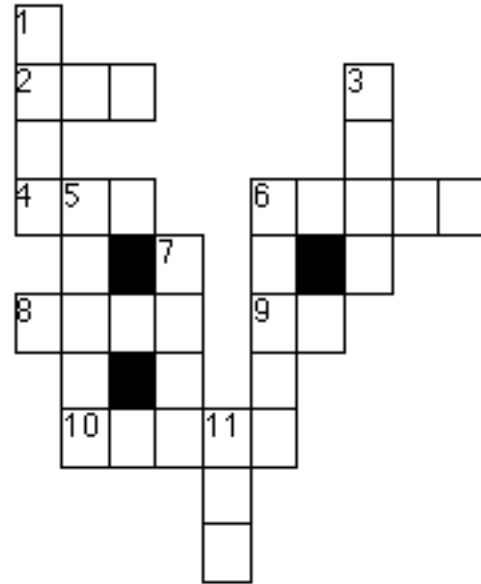
- ★★★★ 6. Complete the cross number puzzle.

DOWN

1. $(28 \times 126) - 21$
3. $? + 716 = 4220$
5. $6521 + 9963 - 12321 + 42896 + 30286$
6. $(364 \times 265) - 41282$
7. Average of 4728, 9630, 7465, and 725
11. $\sqrt{100489}$

ACROSS

2. $6000 - ? = 5486$
4. $280644 \div (300 + 64)$
6. $35^3 + 100^2 + 170$
8. $3 \times 10^3 + 3 \times 10^2 + 7 \times 10^1 + 6 \times 10^0$
9. Age the second year as a teenager
10. $\{[(238 \div 14) + 20] \times 1560\} + 18$



- ★★★★ 7. This weird kid from another planet multiplies differently from us! She gets the right answer, but her work doesn't look like anyone else's in class. Here's what she does:



<i>Given:</i>	<i>Multiply 2×38:</i>	<i>Multiply 40×38:</i>	<i>Add:</i>
$\begin{array}{r} 42 \\ \times 38 \\ \hline \end{array}$	$\begin{array}{r} 42 \\ \times 38 \\ \hline 76 \end{array}$	$\begin{array}{r} 42 \\ \times 38 \\ \hline 76 \\ 1520 \end{array}$	$\begin{array}{r} 42 \\ \times 38 \\ \hline 76 \\ +1520 \\ \hline 1596 \end{array}$

Do these problems this way:

$\begin{array}{r} 14 \\ \times 26 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ \times 53 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ \times 42 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ \times 135 \\ \hline \end{array}$
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