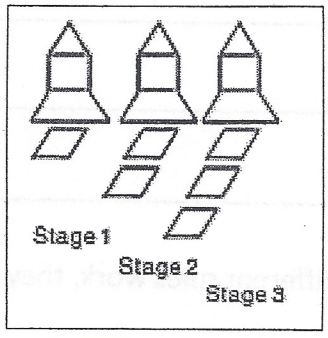
Name _____

Period _____

## Rocket Patterns

Below are pictures of rockets in various stages of liftoff. As the rocket climbs it leaves an increasing trail of exhaust.

Look at the first three stages of the rocket pattern. Using this pattern, draw the 4th and 5th stages of the rocket.




Draw a 4th Stage Rocket

Draw a 5th Stage Rocket

1) What 3 shapes make up the rocket? _____ _____ _____

2) What shape makes up the exhaust puffs? _____

3) Can you describe a stage 10 rocket? What is it made up of? _____

_____

4) Complete the T-Chart

| Stage | Total pieces |
|---|---|
| 1 | 4 |
| 2 | 5 |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |

5) Which part of the rocket pattern stays the same? _____
This part is called the _____.

6) Which part of the rocket pattern changes from stage to stage? _____
This part is called the _____.

7) Try to think of a rule for figuring the total number of pattern pieces for any stage in the rocket pattern. Write your explanation.

_____

_____

_____

There can be more than one rule to describe a pattern. If two different rules work, they are called equivalent.

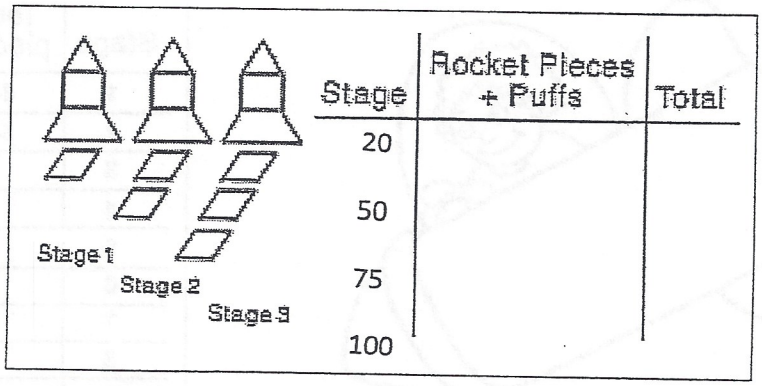
8) Use the rule to find stage 20. _____

Stage 50 _____

Stage 75 _____

Stage 100 _____

Enter the data for #8 into the table below:




| Stage | Rocket Pieces + Puffs | Total |
|---|---|---|
| 20 | | |
| 50 | | |
| 75 | | |
| 100 | | |

n/ + 3