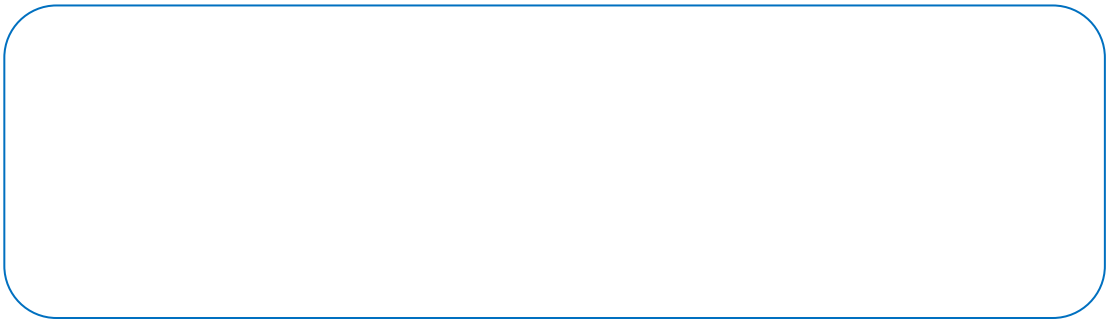
Patterns of Whole Numbers

1. **Fill in the blanks.**
   - **a.** _____and _____numbers can be shown as square.
   - **b.** _____and _____numbers can be shown as rectangles.
   - **c.** _____and _____numbers can be shown as triangle.

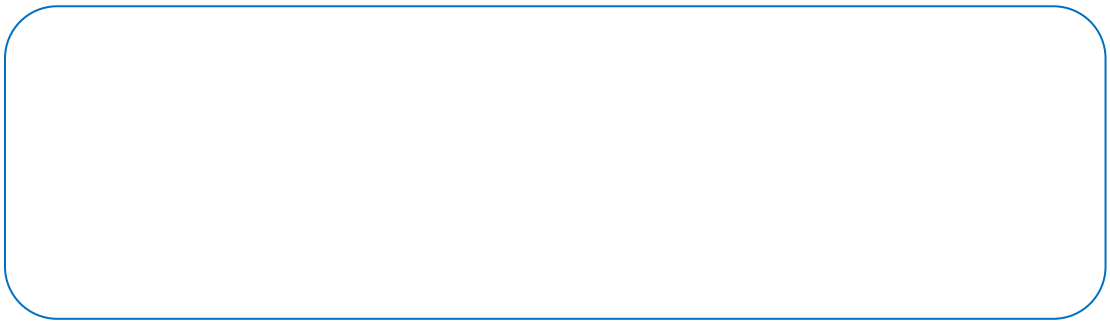
2. **Draw the rectangle using dots. Mention the number of dots used for making the rectangles.**

3. **Write the numbers that can be shown by two rectangles. Give at least three examples. Draw the diagrams also.**

4. **Starting from 24, write down the first five numbers which can be arranged as triangles.**



5. **Starting from 50, write down the first five numbers which can be arranged as squares.**



6. **Observe the pattern in the following and fill in the blanks.**

I.

a. $9 \times 9 + 7 = 88$

b. $98 \times 9 + 6 = 888$

c. $987 \times 9 + 5 =$ _____

d. $9876 \times 9 + 4 =$ _____

e. $125 + 9 = 125 + 10 - 1 = 135 - 1 = 134$

f. $125 - 9 = 125 - 10 + 1 = 115 + 1 = 116$

g. $125 + 99 = 125 + 100 - 1 = 225 - 1 =$ _____

h. $125 - 99 =$ _____ $=$ _____ $=$ _____

II.

a. $1 \times 8 + 1 = 9$

b. $12 \times 8 + 2 = 98$

c. $123 \times 8 + 3 = 987$

d. $1234 \times 8 + 4 =$ _____

e. $12345 \times 8 + 5 =$ _____

f. $123456 \times 8 + 6 =$ _____

7. Observe the pattern in the following and extend it to three more steps:

I.

a. $6 \times 2 - 5 = 7$

b. $7 \times 3 - 12 = 9$

c. $8 \times 4 - 21 = 11$

d. $9 \times 5 - 32 = 13$

_____ × _____ – _____ = _____

_____ × _____ – _____ = _____

_____ × _____ – _____ = _____

II.

a. $54 \times 5 = 54 \times \frac{10}{2} = 27 \times 10 = 270 \times 1$

b. $54 \times 15 = 54 \times \frac{30}{2} = 27 \times 30 = 270 \times 3$

c. $54 \times 25 = 54 \times \frac{50}{2} = 27 \times 50 =$ _____

d. $54 \times 35 = 54 \times \frac{70}{2} = 27 \times 70 =$ _____

e. $54 \times 45 = 54 \times \frac{90}{2} =$ _____

5. **Observe the pattern and fill in the blanks.**

   a. 13 = 1 = 1

   b. 23 = 8 = 3 + 5

   c. 33 = _____ = 7 + _____+ 11

   d. 43 = _____= 13 + _____+ _____+ 19

   e. 53 = _____= _____23 + _____+ _____+ 29

6. **Which number can be represented in triangular as well as square patterns?**

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