PATTERNS Practice Set 4 of 4

1. A class put three cans full of water in the sun. Each can was covered and had a thermometer in it to measure the temperature of the water in degrees Fahrenheit. One can was painted red, one can was painted blue, and one can was painted yellow. The class collected the data shown below. According to the pattern from the data, what would be the predicted temperature of the water in the blue can at 5 hours?

   A. 42°F
   B. 65°F
   C. 68°F
   D. 70°F

	Red Can	Blue Can	Yellow Can
Start	40°F	40°F	40°F
1 hour	43°F	42°F	40°F
2 hours	47°F	46°F	41°F
3 hours	52°F	52°F	41°F
4 hours	58°F	60°F	42°F
5 hrs	65°F	70°	42°F

(handwritten: +3, +4, +5, +6, +7)

2. A class has 3 tanks with animals in them. One tank has 2 guppies, another tank has 2 turtles, and the last tank has 2 mice. The class measures the reproduction rates of the animals by counting how many animals are in each tank every month. According to the pattern from these data, how many mice will there be after 5 months?

   A. 2 mice
   B. 24 mice
   C. 32 mice
   D. 64 mice

	Guppies	Turtles	Mice
Start	2	2	2
1 month	20	2	4
2 months	200	2	8
3 months	2,000	2	16
4 months	20,000	2	32
5 months	200,000	2	64

3. Janie has a pool in her backyard filled with 5 feet of water. Every day, an inch of water evaporates. How much water will be in Janie's pool after two weeks?

   A. 3 feet, 8 inches
   B. 3 feet, 10 inches
   C. 4 feet
   D. 6 feet, 2 inches

(handwritten work:)
$$\underline{5ft} - 14in = -\frac{5ft}{1ft} = 4ft$$
$$\begin{array}{r} 70in \\ -14in \\ \hline 56 \end{array}$$
5ft
14 days = 14 inches gone
11 1ft, 2in
56 in =
$$\times\frac{12}{4} = 48 \quad \times\frac{12}{6} = 72$$

4. At the start of 3rd grade, Carrie was 4 feet tall. In 3rd grade, she grew 2 inches. In 4th grade, she grew 3 inches. In 5th grade, she grew 4 inches. If this pattern continues, how tall will she be at the END of the 6th grade?

   A. 4 feet, 9 inches
   B. 4 feet, 14 inches
   C. 5 feet, 2 inches
   D. 5 feet, 5 inches

(handwritten work:)
$\frac{3rd}{4f} \rightarrow \frac{3rd}{4ft, 2in}$ 50in $\rightarrow \frac{4th}{4f, 5in}$ 53in $\rightarrow \frac{5th}{4ft 9in}$ 6th 57

5. Use the table to determine the rule for the function.

   A. $m + 5 = k$
   B. $k + 5 = m$
   C. $(k \times 2) + 1 = m$
   D. $k + 4 = m$

k	m
4	9
6	11
13	18
22	27

6. Use the table to determine the rule for the function.
    A. $a - 21 = b$
    B. $4a = b$
    C. $a \div 4 = b$
    D. $a \div 5 = b$

a	b
28	7
20	5
17	4.25
8	2

7. Use the table to determine the rule for the function.
    A. $r + 3 = s$
    B. $r \times 4 = s$
    C. $r \times 4 - 1 = s$
    D. $r \times 3 + 1 = s$

r	s
1	4
3	10
4	13
10	31

8. Use the pattern to help answer the question.

$$4^2 = 1 + 3 + 5 + 7$$
$$3^2 = 1 + 3 + 5$$
$$2^2 = 1 + 3$$
$$1^2 = 1$$

Which of the following is a solution to 5^2?
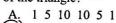   A. $1 + 3 + 5 + 7 + 9$
    B. $1 \times 3 \times 5 \times 7 \times 9$
    C. $1 + 3 + 5 + 7$
    D. 36

9. Use the pattern to help answer the question. In this triangle, each number comes from adding together the two numbers located diagonally above it. For example, the 3's in the fourth row come from adding the 1's and the 2 in the third row. Which of the following could be the next (7th) row of the triangle?

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            1
          1   1
        1   2   1
      1   3   3   1
    1   4   6   4   1
  1   5  10  10   5   1
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    A. 1 5 10 10 5 1
    B. 1 6 15 20 15 6 1
    C. 1 6 15 20 5 2 1
    D. 1 4 5 0 5 4 1

10. In the sequence below, each number is the sum of the two previous numbers. What is the missing number?

0, 1, 1, 2, 3, 5, __, 13, 21, 32

    A. 8
    B. 9
    C. 10
    D. 11