

1.

Content Domain	Main Topic	Cognitive Domain
ALGEBRA	Patterns	Reasoning

Number of matchsticks continuing pattern

Matchsticks are arranged as shown in the figures.



Figure 1



Figure 2



Figure 3

If the pattern is continued, how many matchsticks would be used to make Figure 10?

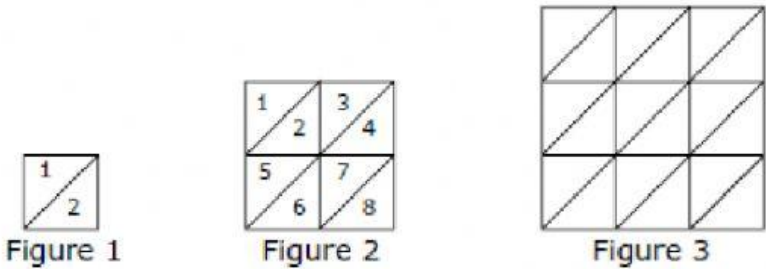
- (A) 30
- (B) 33
- (C) 36
- (D) 39
- (E) 42

2.

Content Domain	Main Topic	Cognitive Domain
A. ALGEBRA	Patterns	Solving Routine Problems

Sequence of figures with triangles: fill table

The three figures below are divided into small congruent triangles.



A. Complete the table below. First, fill in how many small triangles make up Figure 3. Then, find the number of small triangles that would be needed for the 4th figure if the sequence of figures is extended.

Figure	Number of Small Triangles
1	2
2	8
3	
4	

3.

Content Domain	Cognitive Domain
Fractions and Number Sense	Investigating and Solving Problems

Amount of paint left

A painter had 25 L of paint. He used 2.5 L of paint every hour. He finished the job in 5.5 hours. How much paint did he have left?

- A. 10.25 L
- B. 11.25 L
- C. 12.75 L
- D. 13.75 L

4.

Content Domain	Cognitive Domain
Algebra	Investigating and Solving Problems

Find  $\frac{1}{3}$  of number from relationship

If 4 times a number is 48, what is  $\frac{1}{3}$  of the number?

- A. 4
- B. 8
- C. 12
- D. 16

5.

Content Domain	Cognitive Domain
Algebra	Investigating and Solving Problems

Total club members: boys and girls

A club has 86 members, and there are 14 more girls than boys.  
How many boys and how many girls are members of the club?

Show your work.

6.

Content Domain	Cognitive Domain
Geometry	Investigating and Solving Problems

**Measure of angle in quadrilateral**

In a quadrilateral, each of two angles has a measure of  $115^\circ$ . If the measure of a third angle is  $70^\circ$ , what is the measure of the remaining angle?

- A.  $60^\circ$
- B.  $70^\circ$
- C.  $130^\circ$
- D.  $140^\circ$
- E. None of the above