

PA6-1: Increasing Sequences

In an **increasing sequence**, each number is greater than the one before it.

Deborah wants to continue the number pattern:

6, 8, 10, 12, ?

She finds the **difference** between the first two numbers:



$\textcircled{2}$
6, 8, 10, 12, ?

She finds that the difference between the other numbers in the pattern is also 2. So the pattern was made by adding 2:

$\textcircled{2}$ $\textcircled{2}$ $\textcircled{2}$
6, 8, 10, 12, ?

To continue the pattern, Deborah adds 2 to the last number in the sequence.

$\textcircled{2}$ $\textcircled{2}$ $\textcircled{2}$ $\textcircled{2}$
6, 8, 10, 12, 14

The final number in the pattern is 14:

1. Extend the following patterns. Start by finding the gap between the numbers.

a) $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$
2, 5, 8, _____, _____, _____

b) $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$
1, 7, 13, _____, _____, _____

c) $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$
2, 7, 12, _____, _____, _____

d) $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$ $\textcircled{\quad}$
4, 8, 12, _____, _____, _____

e) $\textcircled{\quad}$ $\textcircled{\quad}$
1, 6, 11, _____, _____, _____

f) $\textcircled{\quad}$ $\textcircled{\quad}$
4, 10, 16, _____, _____, _____

g) $\textcircled{\quad}$ $\textcircled{\quad}$
2, 12, 22, _____, _____, _____

h) $\textcircled{\quad}$ $\textcircled{\quad}$
7, 15, 23, _____, _____, _____

i) $\textcircled{\quad}$ $\textcircled{\quad}$
31, 34, 37, _____, _____, _____

j) $\textcircled{\quad}$ $\textcircled{\quad}$
92, 98, 104, _____, _____, _____

k) $\textcircled{\quad}$ $\textcircled{\quad}$
12, 23, 34, _____, _____, _____

l) $\textcircled{\quad}$ $\textcircled{\quad}$
0, 8, 16, _____, _____, _____

2. A plant that is 17 cm high grows 2 cm each day.

a) How high will the plant be after three days? _____

b) In how many days will the plant be 27 cm high? _____

