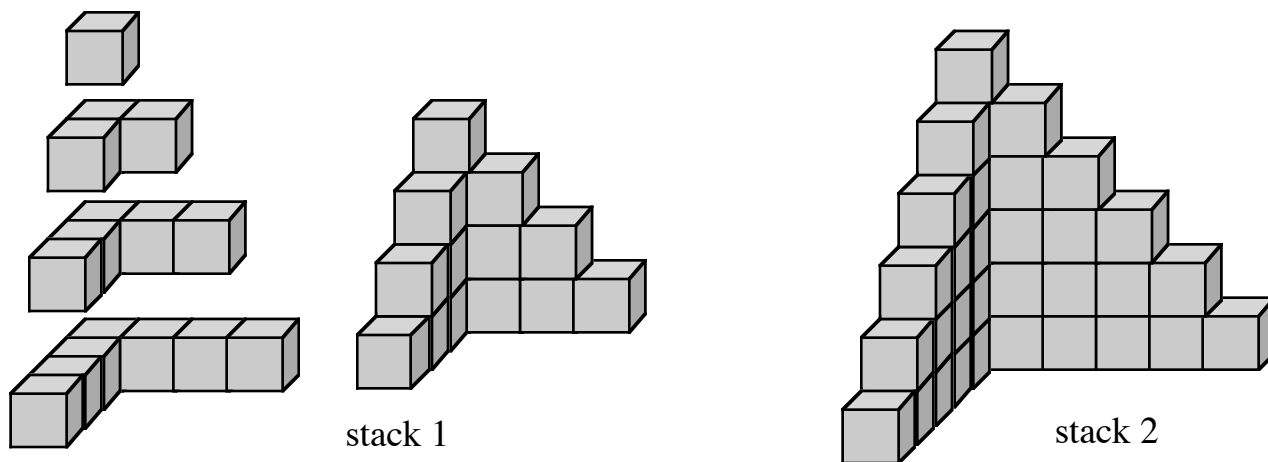


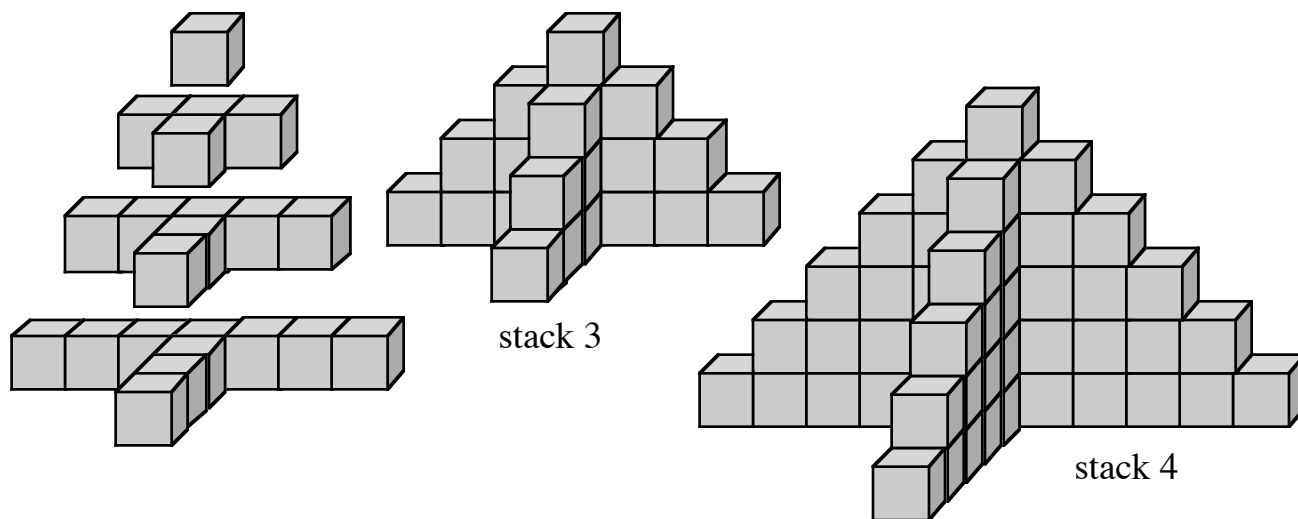
# CUBE TOWERS

1. Cubes of side **10 cm** are built up in layers as shown in the diagram to form a stack.



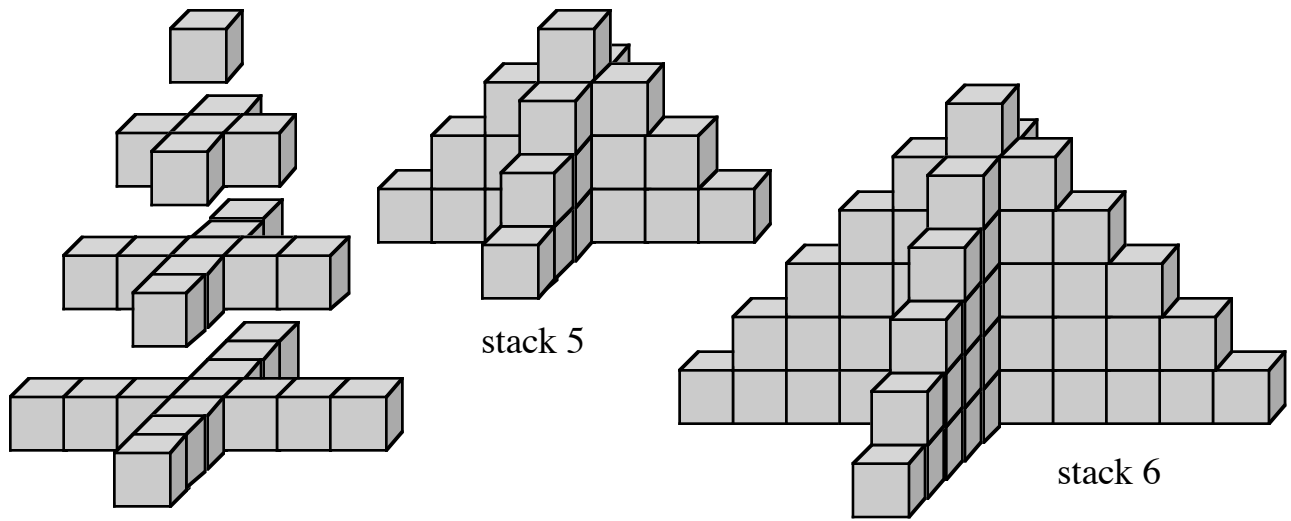
- Find:
- (a) the height of stack 1.
  - (b) the number of cubes in stack 1.
  - (c) the height of stack 2.
  - (d) the number of cubes in stack 2.
  - (e) the number of cubes in a stack with a height of 80 cm.
  - (f) the number of cubes in a stack with a height of 1.1 m.

2. Cubes of side **8 cm** are built up in layers as shown in the diagram to form a stack.



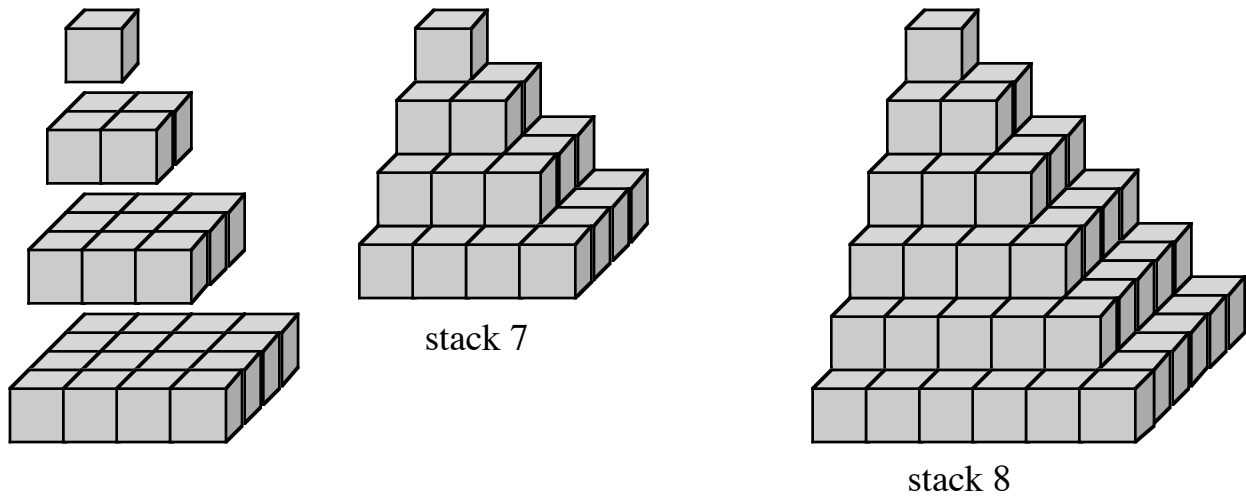
- Find:
- (a) the height of stack 3.
  - (b) the number of cubes in stack 3.
  - (c) the height of stack 4.
  - (d) the number of cubes in stack 4.
  - (e) the number of cubes in a stack with a height of 72 cm.
  - (f) the number of cubes in a stack with a height of 1.2 m.

3. Cubes of side **7 cm** are built up in layers as shown in the diagram to form a stack.



- Find:
- (a) the height of stack 5.
  - (b) the number of cubes in stack 5.
  - (c) the height of stack 6.
  - (d) the number of cubes in stack 6.
  - (e) the number of cubes in a stack with a height of 70 cm.
  - (f) the number of cubes in a stack with a height of 1.05 m.

4. Cubes of side **9 cm** are built up in layers as shown in the diagram to form a stack.



- Find:
- (a) the height of stack 7.
  - (b) the number of cubes in stack 7.
  - (c) the height of stack 8.
  - (d) the number of cubes in stack 8.
  - (e) the number of cubes in a stack with a height of 72 cm.
  - (f) the number of cubes in a stack with a height of 1.08 m.

# ANSWERS

1. (a) 40 cm      (b)  $1+3+5+7 = 16$       (c) 60 cm      (d)  $1+3+5+7+9+11 = 36$   
(e)  $1+3+5+7+9+11+13+15 = 64$   
(f)  $1+3+5+7+9+11+13+15+17+19+21 = 121$
2. (a) 32 cm      (b)  $1+4+7+10 = 22$       (c) 48 cm      (d)  $1+4+7+10+13+16 = 51$   
(e)  $1+4+7+10+13+16+19+22+25 = 117$   
(f)  $1+4+7+10+13+16+19+22+25+28+31+34+37+40+43 = 330$
3. (a) 28 cm      (b)  $1+5+9+13 = 28$       (c) 42 cm      (d)  $1+5+9+13+17+21 = 66$   
(e)  $1+5+9+13+17+21+25+29+33+37 = 190$   
(f)  $1+5+9+13+17+21+25+29+33+37+41+45+49+53+57 = 435$
4. (a) 36 cm      (b)  $1+4+9+16 = 30$       (c) 54 cm      (d)  $1+4+9+16+25+36 = 91$   
(e)  $1+4+9+16+25+36+49+64 = 204$   
(f)  $1+4+9+16+25+36+49+64+81+100+121+144 = 650$