

Name: \_\_\_\_\_

Exam Style Questions



**Triangular Numbers**

**Corbettmaths**

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

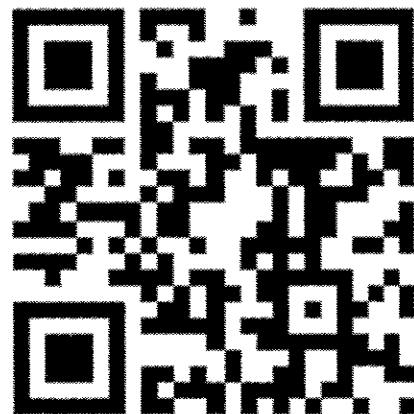
### Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

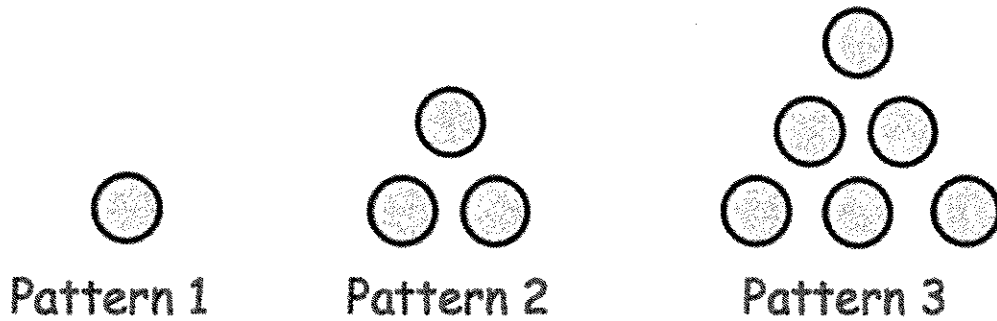
Revision for this topic

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

**Video 229**



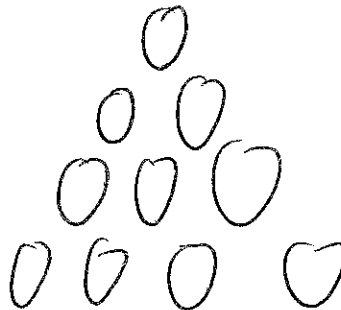
1. The pattern below show the first 3 triangular numbers.



(a) Write down the first three triangular numbers.

1, 3, 6  
(1)

(b) In the space below, draw Pattern 4



(1)

(c) Write down the fourth triangular number.

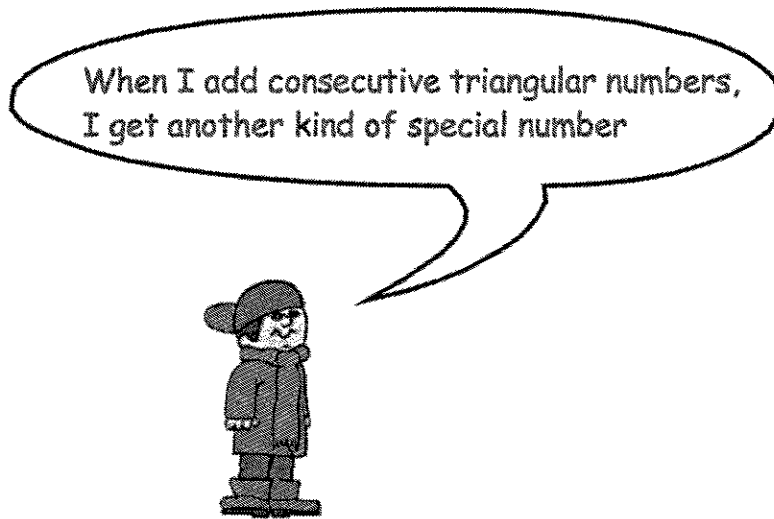
10  
(1)

3. List the first ten triangular numbers.

1, 3, 6, 10, 15, 21, 28, 36, 45, 55

(2)

4. John is adding consecutive triangular numbers.



What kind of number does John get?

$$1 + 3 = 4$$

$$3 + 6 = 9$$

$$6 + 10 = 16$$

$$10 + 15 = 25$$

square numbers

(2)

5. Is 210 a triangular number?

$$T = \frac{n(n+1)}{2}$$

$$210 = \frac{n(n+1)}{2}$$

$$420 = n(n+1)$$

20 × 21

..... yes  
(2)

6. Is 1000 a triangular number?

$$1000 = \frac{n(n+1)}{2}$$

$$2000 = n(n+1)$$

no integer values for n

..... No  
(2)

7. Is 4950 a triangular number?

$$4950 = \frac{n(n+1)}{2}$$

$$9900 = n(n+1)$$

$$n = 99$$

yes

..... yes  
(2)

8. There are 6 people in a room.  
Everybody shakes hands with each other, once.



Work out how many handshakes there were in total.

1 person	-	N/A
2 people	-	1
3 people	-	3
4 people	-	6
5 people	-	10
6 people	-	15

15  
.....  
(4)

9. The triangular numbers are 1, 3, 6, 10, ... ..  
The nth term of this sequence is  $\frac{1}{2}n(n + 1)$

Find the 200th triangular number

200<sup>th</sup> triangular number

$$\frac{1}{2}(200)(201)$$

=

$$\frac{20100}{(2)}$$