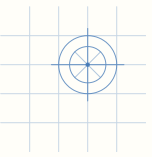


Complex numbers — Powers of i



Name: _____

Date: _____

Work out each power of i .

1 i^{17}

$$\begin{aligned} i^1 &= i, i^2 = -1, i^3 = -i, i^4 = 1 \\ 17 \div 4 &= 4 \text{ remainder } 1 \\ &= i \end{aligned}$$

2 i^5

3 i^{10}

4 i^{18}

5 i^{22}

6 i^{16}

7 i^9

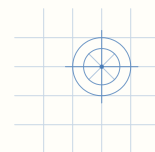
8 i^8

9 i^3

10 i^4



Complex numbers · Powers of i — Answer key



1. $i^{17} = i$

2. $i^5 = i$

3. $i^{10} = -1$

4. $i^{18} = -1$

5. $i^{22} = -1$

6. $i^{16} = 1$

7. $i^9 = i$

8. $i^8 = 1$

9. $i^3 = -i$

10. $i^4 = 1$