



## Activity 8

# Power Patterns

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Complete the table.

Number	Square Root
100	
200	
300	
400	
500	
600	
700	
800	
900	
1,000	

2. What is the greatest number less than 1,000 that is a perfect square?  
How did you find your answer? How did the numbers in the table help you find the answer?

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3. Complete the table.

Number	Cube Root
1,000	
2,000	
3,000	
4,000	
5,000	
6,000	
7,000	
8,000	
9,000	
10,000	

4. What is the greatest number less than 10,000 that is a perfect cube? How did you find your answer? How did the numbers in the table help you find the answer?

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5. What is the greatest perfect square that can be displayed by the calculator without using scientific notation? How did you find your answer?

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6. What is the greatest perfect cube that can be displayed by the calculator without using scientific notation? How did you find your answer?

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7. Complete the table.

<b>Number</b>	<b>Fourth Root</b>
10,000	
20,000	
30,000	
40,000	
50,000	
60,000	
70,000	
80,000	
90,000	
100,000	

8. What is the greatest number less than 100,000 that is a perfect fourth power? How did you find your answer? How did the numbers in the table help you find the answer?

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9. Complete the table.

<b>Number</b>	<b>Seventh Root</b>
10,000,000	
20,000,000	
30,000,000	
40,000,000	
50,000,000	
60,000,000	
70,000,000	
80,000,000	
90,000,000	
100,000,000	

10. What is the greatest number less than 100,000,000 that is a perfect seventh power? How did you find your answer? How did the numbers in the table help you find the answer?

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11. What is the greatest perfect fourth power that can be displayed by the calculator without using scientific notation? How did you find your answer?

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12. What is the greatest perfect seventh power that can be displayed by the calculator without using scientific notation? How did you find your answer?

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Solve each riddle.

13. I am the number between 10 and 20 whose square is closest to 300. Who am I?

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14. I am the number between 10 and 20 whose cube is closest to 3,000. Who am I?

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15. I am the number whose square is the greatest perfect square less than 800. Who am I?

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16. I am the number whose cube is the greatest perfect cube less than 8,000. Who am I?

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17. I am the number whose fifth power is the greatest perfect fifth power less than 800,000. Who am I?

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18. I am the least four-digit square number. Who am I?

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19. I am the least five-digit cube number. Who am I?

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For each problem, list the ten numbers and then find the sum.

20. I am the sum of the first ten whole numbers. Who am I?

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21. I am the sum of the squares of the first ten whole numbers. Who am I?

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22. I am the sum of the cubes of the first ten whole numbers. Who am I?

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23. I am the sum of the first ten prime numbers. Who am I?

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24. I am the sum of the squares of the first ten prime numbers. Who am I?

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25. I am the sum of the cubes of the first ten prime numbers. Who am I?

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