

# 6.1 Puzzle Time

## What Happens When You Annoy A Clock?

Write the letter of each answer in the box containing the exercise number.

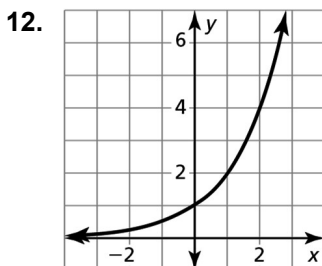
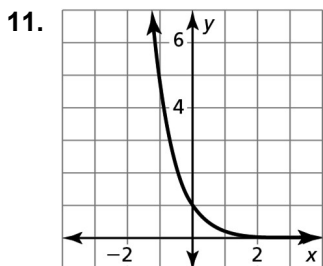
Evaluate the expression for  $x = 3$ .

- |                      |                      |
|----------------------|----------------------|
| 1. $5^x$             | 2. $(\frac{1}{2})^x$ |
| 3. $(1.5)^x$         | 4. $(0.2)^x$         |
| 5. $(\frac{5}{2})^x$ | 6. $2 \cdot 3^x$     |
| 7. $9 + 2^x$         | 8. $4^x - 1$         |

Determine whether the function represents *exponential growth* or *exponential decay*.

9.  $y = (\frac{3}{2})^x$
10.  $y = (\frac{1}{4})^x$

Match the graph with its function.



**Answers**

F.  $y = (0.2)^x$

I. 15.625

Y. 125

T. exponential growth

O.  $\frac{1}{8}$

F.  $y = 2^x$

T. 0.008

C. 54

I. 63

U. 3.375

O. exponential decay

K. 17

1	2	3		4	5	6	7		8	9		10	11	12
---	---	---	--	---	---	---	---	--	---	---	--	----	----	----

# 6.2 Puzzle Time

## What Does An Astronaut Use To Dust Those Hard-To-Reach Black Holes?

Write the letter of each answer in the box containing the exercise number.

Simplify the expression.

1.  $e^{-2} \cdot e^8$

2.  $e^7 \cdot e \cdot e^3$

3.  $2e^4 \cdot 3e^2$

4.  $\frac{12e^7}{8e^5}$

5.  $\frac{5e^{11}}{10e^{14}}$

6.  $\sqrt{64e^{10x}}$

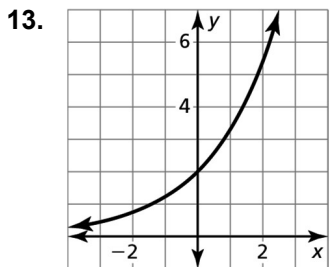
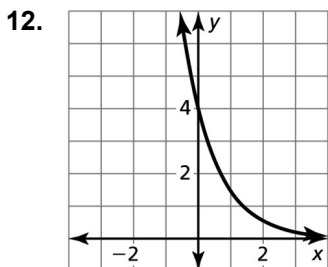
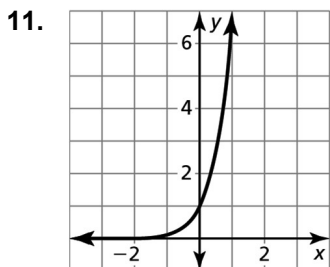
7.  $\sqrt[5]{32e^{10x}}$

8.  $(3e^{2x})^2$

9.  $e^{-2x} \cdot e^x \cdot e^{6x+2}$

10.  $(2e^{-5x})^4$

Match the graph with its function.



**Answers**

<p>M. <math>8e^{5x}</math></p> <p>V. <math>e^6</math></p> <p>C. <math>6e^6</math></p> <p>C. <math>2e^{2x}</math></p> <p>R. <math>y = 2e^{0.5x}</math></p> <p>E. <math>e^{5x+2}</math></p> <p>E. <math>y = 4e^{-x}</math></p>	<p>A. <math>e^{11}</math></p> <p>N. <math>y = e^{2x}</math></p> <p>U. <math>\frac{3e^2}{2}</math></p> <p>L. <math>9e^{4x}</math></p> <p>U. <math>\frac{1}{2e^3}</math></p> <p>A. <math>\frac{16}{e^{20x}}</math></p>
--	--

1	2	3	4	5	6	7	8	9	10	11	12	13
---	---	---	---	---	---	---	---	---	----	----	----	----