

Homework 22.3

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Simplify each expression.

1) $(r^3 - 5r^2 + 6) - (2 + 5r^2 + 7r^3)$

$$\begin{array}{r}
 r^3 - 5r^2 + 6 - 2 - 5r^2 - 7r^3 \\
 \hline
 r^3 - 5r^2 + 6 \\
 - 7r^3 - 5r^2 - 2 \\
 \hline
 - 6r^3 - 10r^2 + 4
 \end{array}$$

2) $(-3b^3 + b - 6) + (-b^3 - 5 + 5b)$

$$\begin{array}{r}
 -3b^3 + b - 6 \\
 -b^3 + 5b - 5 \\
 \hline
 -4b^3 + 6b - 11
 \end{array}$$

3) $(-n^3 - n^4 + 4n) + (-6n - 5n^4 - 3n^2)$

$$\begin{array}{r}
 -n^4 - n^3 + 4n \\
 -5n^4 - 3n^2 - 6n \\
 \hline
 -6n^4 - n^3 - 3n^2 - 2n
 \end{array}$$

4) $(-8x^3 - 6 - 8x) - (6 - x - 2x^3)$

$$\begin{array}{r}
 -8x^3 - 6 - 8x - 6 + x + 2x^3 \\
 -8x^3 - 8x - 6 \\
 + 2x^3 + x - 6 \\
 \hline
 -6x^3 - 7x - 12
 \end{array}$$

5) $(-3a^4 + 5 + 4a^2) - (-8 - 8a^2 - 5a^4)$

$$\begin{array}{r}
 -3a^4 + 5 + 4a^2 + 8 + 8a^2 + 5a^4 \\
 -3a^4 + 4a^2 + 5 \\
 + 5a^4 + 8a^2 + 8 \\
 \hline
 2a^4 + 12a^2 + 13
 \end{array}$$

6) $(6m^2 + 1 + 8m^3) + (m^2 + 3 + 6m)$

$$\begin{array}{r}
 8m^3 + 6m^2 + 1 \\
 + m^2 + 6m + 3 \\
 \hline
 8m^3 + 7m^2 + 6m + 4
 \end{array}$$

What is the domain and range of the relation shown in the table provided? Determine if the relation is a function.

7.

x	y
7	-1
-3	-5
-4	6
5	9

8.

x	y
3	-2
5	-9
3	6
8	4

Domain: $\{-4, -3, 5, 7\}$
 Range: $\{-1, -5, 6, 9\}$

function

Domain: $\{3, 5, 8\}$
 Range: $\{-2, -9, 6, 4\}$

Not a function

Determine which set of ordered pairs represent a function.

9. $\{(3, 5), \underline{(4, 5)}, (\underline{2}, 8), (\underline{4}, 1)\}$

No a function

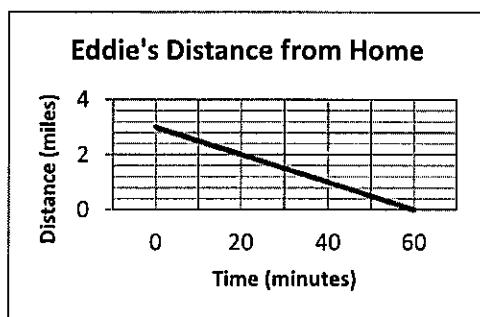
10. $\{(5, 7), (\underline{-2}, 3), (\underline{4}, 6), (\underline{9}, 11)\}$

function

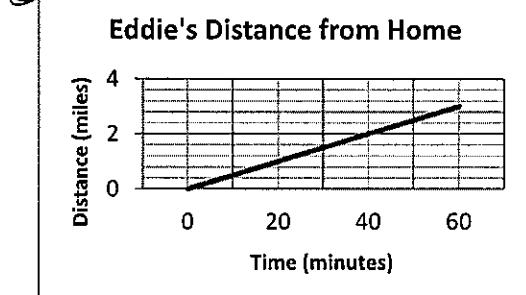
11. Eddie rode his skateboard from his home to school at a constant speed.

Which graph best represents Eddie's distance from his home over time?

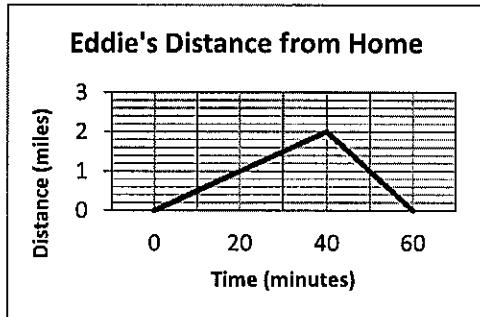
A.



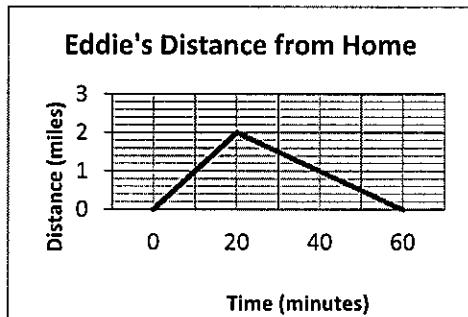
B.



C.



D.



Answers to Homework 22.3

1) $-6r^3 - 10r^2 + 4$

5) $2a^4 + 12a^2 + 13$

7. Domain: $\{-4, -3, 5, 7\}$ Range: $\{-5, -1, 6, 9\}$

Function

2) $-4b^3 + 6b - 11$

6) $8m^3 + 7m^2 + 6m + 4$

8. Domain: $\{3, 5, 8\}$ Range: $\{-9, -2, 4, 6\}$

Not a Function

3) $-6n^4 - n^3 - 3n^2 - 2n$

4) $-6x^3 - 7x - 12$

9. Not a Function

10. Function

11. B.