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Practice: Comparing Linear Functions A

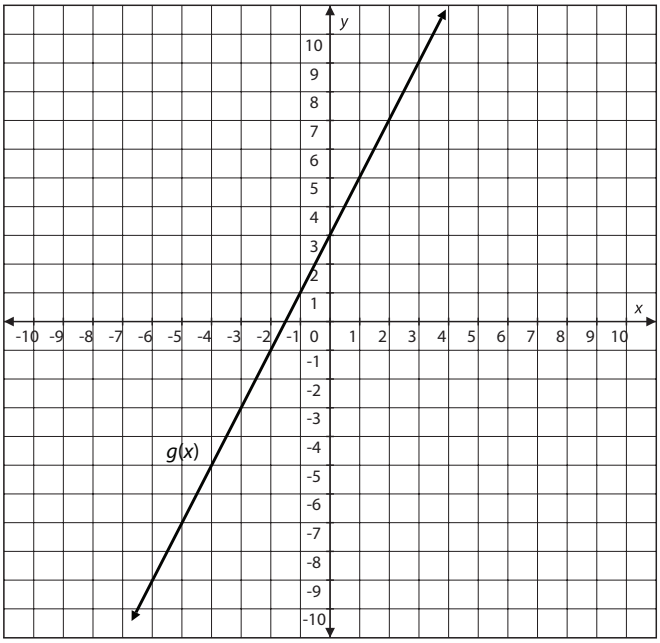
Compare the properties of the linear functions.

1. Which function has a greater rate of change? Which function has the greater *y*-intercept? Explain how you know.

Function A

x	$f(x)$
–4	12
–1	0
2	–12
3	–16

Function B

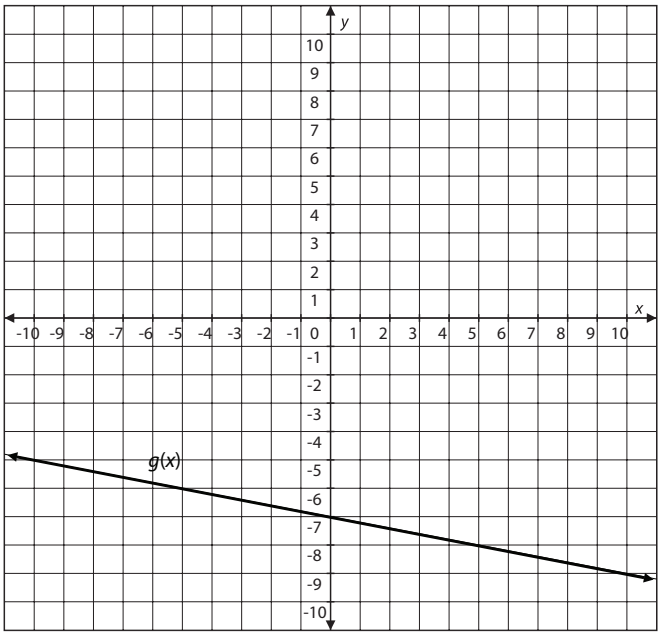


2. Which function has a greater rate of change? Which function has the greater *y*-intercept? Explain how you know.

Function A

x	$f(x)$
–8	1
0	2
4	2.5
8	3

Function B



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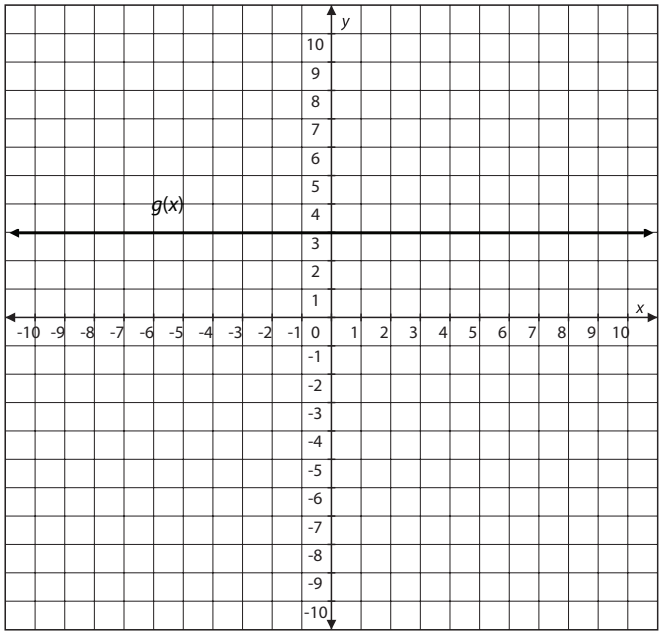
3. Compare the properties of each function.

Function A

$$f(x)=\frac{1}{4}x+3$$

Function B

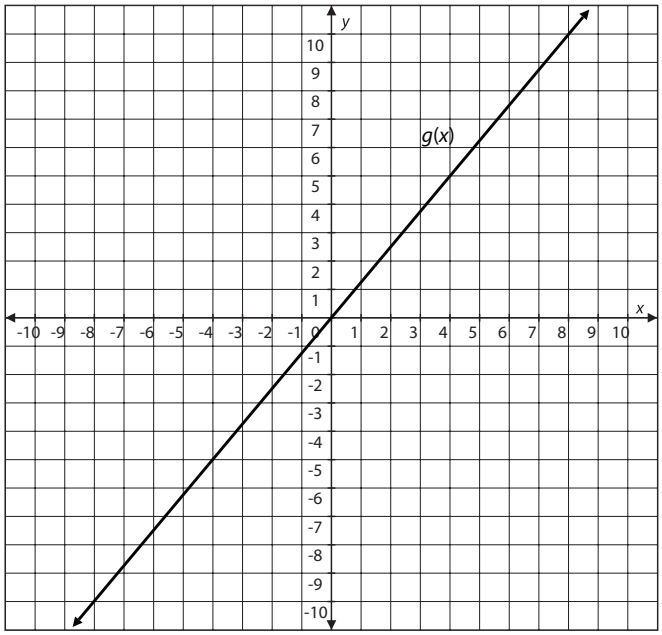


4. Compare the properties of each function.

Function A

$f(x) = -5x$

Function B



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5. Compare the properties of each function.

Function A

The following table describes the profit in dollars that a restaurant makes for the number of beverages it sells.

Number of beverages sold (x)	Profit ($f(x)$)
0	0
25	29.25
50	58.50
75	87.75

Function B

For each hamburger sold, the same restaurant makes a profit of $0.40.

6. Compare the properties of each function.

Function A

A local newspaper began with a circulation of 1,300 readers in its first year. Since then, its circulation has increased by 150 readers per year.

Function B

The function $g(x) = 225x + 950$ represents the circulation of another newspaper where $g(x)$ represents total subscriptions and x represents the number of years since its first year.

7. Compare the properties of each function.

Function A

A rental store charges $40 to rent a steam cleaner, plus an additional $4 per hour.

Function B

The following table shows the total cost in dollars to rent a steam cleaner at a different rental store. $g(x)$ represents the total cost after x hours.

Hours (x)	Total cost ($g(x)$)
3	46
4	53
5	60
6	67

continued

8. Compare the properties of each function.

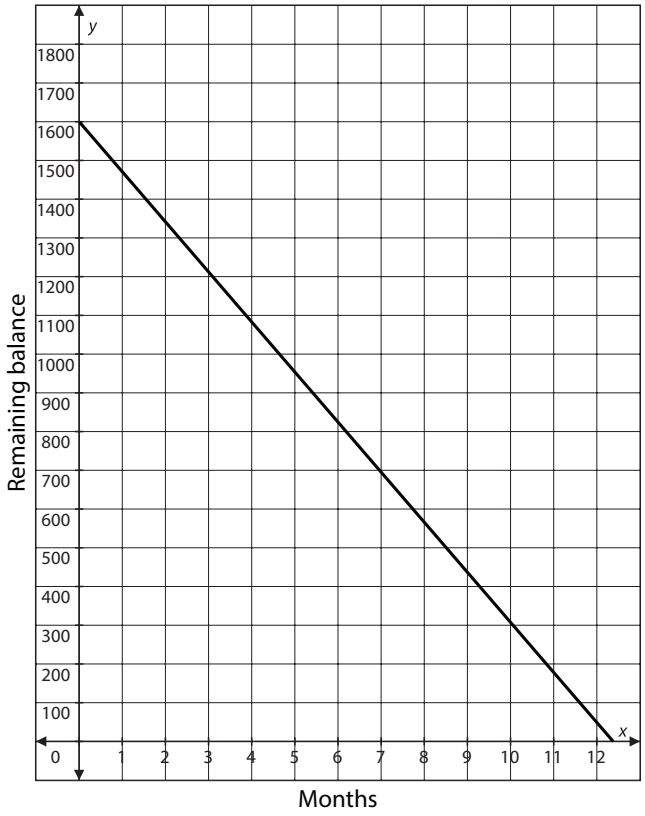
Function A

The table shows the remaining balance in dollars, $f(x)$, of the cost of car repairs after x months.

Months (x)	Remaining balance ($f(x)$)
0	1560
1	1430
2	1300
3	1170

Function B

The graph shows the remaining balance in dollars, $g(x)$, of the cost of car repairs after x months.



9. Compare the properties of each function. What do the rate of change and y-intercept mean in terms of the scenarios?

Function A

The function $f(x) = 7.5 - 0.25x$ represents the pounds of puppy food remaining, $f(x)$, when the puppy is fed the same amount each day for x days.

Function B

The table represents the amount in pounds of puppy food remaining, $g(x)$, when the puppy is fed the same amount each day for x days.

Days (x)	Remaining food ($g(x)$)
4	9
5	8.75
6	8.5
7	8.25

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10. Compare the properties of each function. What do the rate of change and y-intercept mean in terms of the scenarios?

Function A

Reggie bicycled 15 miles last week and plans to bicycle 20 miles each additional week.

Function B

The graph represents the total number of miles Zac plans to have bicycled by the end of each week.