

# Vermont SBAC Grade 8 Math Quizzes

*Quick Topic Assessments with Answer Key*

**Dr. A. Nazari**

Copyright © 2026 Dr. A. Nazari

Published by View Math Education

ViewMath.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

The information in this book is distributed on an “as is” basis, without warranty. While every precaution has been taken in the preparation of this work, neither the author nor the publisher shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the information contained in this book.

*Copyright © 2026*

---

QUICK QUIZZES FOR EVERY TOPIC

# Grade 8 Math Quizzes

Topic Quizzes • Chapter Reviews • Answer Key

---

*Quick, focused quizzes are one of the best ways to find out what you really know — and what you still need to work on.*

*This book has a short quiz for every Grade 8 math topic. Each one takes about 10–15 minutes and covers the most important skills for that section. Take a quiz, score it, and see exactly where you stand.*

*Use it after studying a topic, the night before a test, or anytime you want a fast check-in on your math skills.*



## Take the Quiz

*10–15 minutes  
per quiz*



## Score It

*Check every answer  
in the key*



## Review & Retry

*Study what you missed  
then quiz again*

CHAPTER

1

# Irrational Numbers

## ★ What's Inside ★

Quiz 1: Rational and Irrational Numbers .....	3
---	---



PREVIEW



Get Online



Find more at  
[ViewMath.com/Grade8](https://www.viewmath.com/Grade8)



 CHAPTER 1

# Quiz 1

## Rational and Irrational Numbers

Name: \_\_\_\_\_

Date: \_\_\_\_\_

★ Score: \_\_\_\_\_ / 8

1 Which of the following numbers is **irrational**?

A. 0.75

B.  $\sqrt{5}$

C.  $-3$

D.  $0.\overline{3}$

2 Circle **all** the irrational numbers from the cards below.

$\sqrt{16}$

$\pi$

$0.\overline{45}$

$\sqrt{11}$

$-7$

3 True or False: Every number with a **non-terminating** decimal is irrational.

True

False

4 Three points are plotted on the number line below. Their exact values are  $\frac{3}{2}$ ,  $\sqrt{3}$ , and  $\frac{5}{2}$ . Which point represents the **irrational** number?



P

Q

R

All are rational

5 Simplify:  $\sqrt{81} =$  \_\_\_\_\_. Is  $\sqrt{81}$  rational or irrational? \_\_\_\_\_

6 Compare  $\sqrt{2}$  and 1.5. Circle  $>$ ,  $<$ , or  $=$ .

$\sqrt{2}$



1.5



Find more at  
[ViewMath.com/Grade8](http://ViewMath.com/Grade8)



### Bonus Challenge

This is a bonus question for extra credit. Give it your best attempt.

7 A student claims: " $\sqrt{n}$  is **always** irrational." Find **three** values of  $n$  (where  $1 \leq n \leq 20$ ) that prove the student wrong. Explain why each one is rational.

 Show your work

### Score Summary

I got \_\_\_\_\_ out of \_\_\_\_\_ correct.



Find more at  
[ViewMath.com/Grade8](https://www.viewmath.com/Grade8)



CHAPTER

2

# Lines and Linear Equations

## ★ What's Inside ★

Quiz 2: Graphing Proportional Relationships .....	7
---	---



PREVIEW



Get Online



Find more at  
[ViewMath.com/Grade8](https://www.viewmath.com/Grade8)



 CHAPTER 3

## Quiz 2

### Graphing Proportional Relationships

 Name: \_\_\_\_\_

 Date: \_\_\_\_\_

 Score: \_\_\_\_\_ / 8

- 1 The graph shows a proportional relationship. What is the **constant of proportionality** ( $k$ )?



A. 3

B. 2

C. 6

D.  $\frac{1}{2}$

- 2 Complete the table for a proportional relationship.

Time (h)	1	3	5
Distance (mi)	8	_____	_____

- 3 True or False: The equation  $y = 5x + 2$  represents a **proportional relationship**.

True       False

- 4 Compare the **unit rates** (gallons per minute). Circle  $>$ ,  $<$ , or  $=$ .



Get Online



Find more at  
[ViewMath.com/Grade8](https://www.viewmath.com/Grade8)



**Pipe A: 36 gal in 4 min** **Pipe B: 50 gal in 5 min**

- 5 A proportional relationship passes through  $(5, 20)$ . Write the equation in the form  $y = kx$ .

Equation: \_\_\_\_\_

- 6 A car uses gas at a constant rate: 2 gallons for every 50 miles. How many gallons does it need for 175 miles?

Gallons: \_\_\_\_\_

### Bonus Challenge

This is a bonus question for extra credit. Give it your best attempt.

- 7 Store A sells fruit for  $y = 3x$  (dollars per pound). Store B's prices: 2 lb costs \$5, 4 lb costs \$10. Which store is cheaper, and how much would 10 pounds cost there? Show your work.

 Show your work

### Score Summary

I got \_\_\_\_\_ out of \_\_\_\_\_ correct.



Find more at  
[ViewMath.com/Grade8](https://www.viewmath.com/Grade8)



# *Answer Key & Explanations*



## Answer Key

First try each quiz on your own, then check your work here.

### Chapter 1

#### Quiz 1: Rational and Irrational Numbers

1 B ( $\sqrt{5}$ )

2  $\pi$  and  $\sqrt{11}$

3 False

4 Q

5 9; Rational

6 <

7  $n = 1, 4, 9,$  or  $16$  (any three)

#### Explanations

1  $0.75 = \frac{3}{4}$  (terminates — rational).  $\sqrt{5} \approx 2.2360\dots$  (non-repeating, non-terminating — irrational).  $-3 = \frac{-3}{1}$  (integer — rational).  $0.\bar{3} = \frac{1}{3}$  (repeats — rational). Common mistake: thinking  $-3$  is irrational because it is negative. Negative numbers can absolutely be rational! ✓

2  $\sqrt{16} = 4$  (perfect square — rational).  $\pi \approx 3.14159\dots$  (never terminates or repeats — irrational).  $0.\overline{45}$  repeats, so it equals  $\frac{5}{11}$  (rational).  $\sqrt{11} \approx 3.316\dots$  (11 is not a perfect square — irrational).  $-7 = \frac{-7}{1}$  (integer — rational). Common mistake: forgetting that  $\sqrt{16}$  simplifies to a whole number. ✓

3 A non-terminating decimal can still **repeat**, which makes it rational. For example,  $0.333\dots = 0.\bar{3} = \frac{1}{3}$  never terminates, but it repeats, so it is rational. Only decimals that are non-terminating **and** non-repeating are irrational. ✓



Get Online



Find more at  
[ViewMath.com/Grade8](http://ViewMath.com/Grade8)



 [ViewMath.com](http://ViewMath.com)



4  $P$  is at  $\frac{3}{2} = 1.5$  (rational — it is a fraction of integers).  $Q$  is at  $\sqrt{3} \approx 1.732$  (irrational — 3 is not a perfect square).  $R$  is at  $\frac{5}{2} = 2.5$  (rational). Only  $Q$  is irrational. On the number line,  $Q$  sits between 1 and 2, slightly past 1.7. ✓

5  $\sqrt{81} = 9$  because  $9 \times 9 = 81$ . Since 9 is an integer, it can be written as  $\frac{9}{1}$ , making it rational. Common mistake: assuming **all** square roots are irrational. Only square roots of non-perfect squares (like  $\sqrt{2}$ ,  $\sqrt{11}$ ) are irrational. ✓

6  $\sqrt{2} \approx 1.414$ . Since  $1.414 < 1.5$ , we have  $\sqrt{2} < 1.5$ . Verify:  $1.5^2 = 2.25 > 2$ , so  $1.5 > \sqrt{2}$ .  $1.4^2 = 1.96 < 2$ , so  $1.4 < \sqrt{2}$ . This confirms  $\sqrt{2}$  is between 1.4 and 1.5, and therefore less than 1.5. ✓

7 The perfect squares between 1 and 20 are 1, 4, 9, and 16.  $\sqrt{1} = 1$ ,  $\sqrt{4} = 2$ ,  $\sqrt{9} = 3$ ,  $\sqrt{16} = 4$ . Each is an integer, so each is rational ( $\frac{1}{1}$ ,  $\frac{2}{1}$ , etc.). Any three of these disprove the claim. ✓

## Chapter 2

### Quiz 2: Graphing Proportional Relationships

1 B (2)

2 24 and 40

3 False

4 <

5  $y = 4x$

6 7

7 Store B; \$25

### Explanations

1 For a proportional relationship  $y = kx$ , pick any point on the line:  $k = \frac{y}{x} = \frac{6}{3} = 2$ . Common mistake: choosing  $k = 3$  (the  $x$ -value) or  $k = 6$  (the  $y$ -value) instead of dividing  $y \div x$ . ✓



Get Online



Find more at  
[ViewMath.com/Grade8](https://www.viewmath.com/Grade8)



2 The unit rate is  $k = 8$  miles per hour. At 3 h:  $8 \times 3 = 24$  mi. At 5 h:  $8 \times 5 = 40$  mi. In a proportional table, multiply each  $x$ -value by  $k$ . ✓

3 A proportional relationship has the form  $y = kx$  and passes through the origin  $(0, 0)$ . The equation  $y = 5x + 2$  has a  $y$ -intercept of 2, so at  $x = 0$  we get  $y = 2$ , not 0. That extra  $+2$  means it is **not** proportional. ✓

4 Pipe A:  $\frac{36}{4} = 9$  gal/min. Pipe B:  $\frac{50}{5} = 10$  gal/min. Since  $9 < 10$ , Pipe A's rate is **less than** Pipe B's rate. Common mistake: comparing totals (36 vs 50) instead of unit rates. ✓

5 Find  $k$ :  $k = \frac{y}{x} = \frac{20}{5} = 4$ . So the equation is  $y = 4x$ . Check:  $y = 4(5) = 20$ . ✓

6 Unit rate:  $\frac{2}{50} = 0.04$  gal/mi (or  $\frac{50}{2} = 25$  mi/gal). For 175 mi:  $175 \div 25 = 7$  gallons. Alternatively, set up a proportion:  $\frac{2}{50} = \frac{x}{175}$ , so  $x = \frac{2 \times 175}{50} = 7$ . ✓

7 Store A:  $k = 3$  (\$3/lb). Store B:  $k = \frac{5}{2} = 2.50$  (\$2.50/lb). Since  $\$2.50 < \$3.00$ , Store B is cheaper. At 10 lb:  $10 \times 2.50 = \$25$ . Check Store A:  $10 \times 3 = \$30$  — that's \$5 more. ✓



**Well done checking your answers!**

Keep practicing to strengthen your skills.

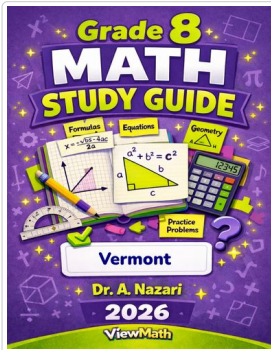


Find more at  
[ViewMath.com/Grade8](https://www.viewmath.com/Grade8)



 **Great Job! Keep Learning with ViewMath!**

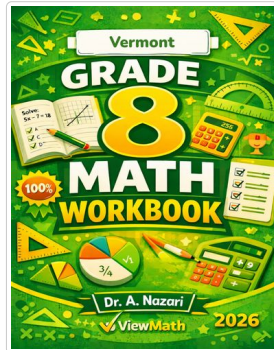
Keep up the great work! Visit [viewmath.com/VT-Grade8](http://viewmath.com/VT-Grade8) for free lessons, quizzes, and more.



Study Guide



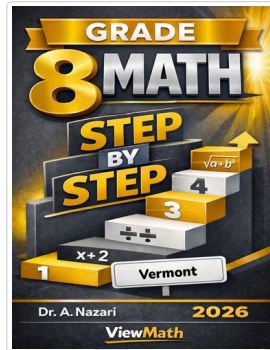
Scan Me



Workbook



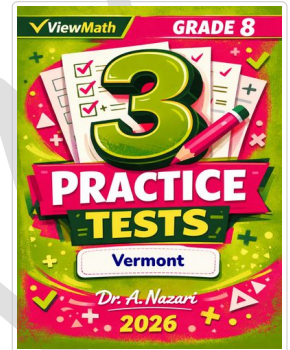
Scan Me



Step-by-Step



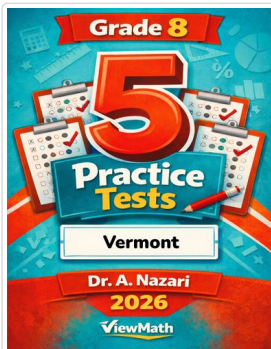
Scan Me



3 Practice Tests



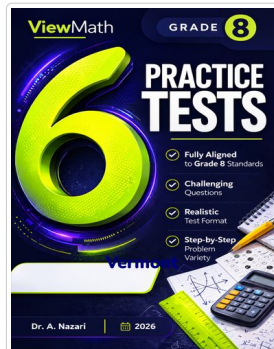
Scan Me



5 Practice Tests



Scan Me



6 Practice Tests



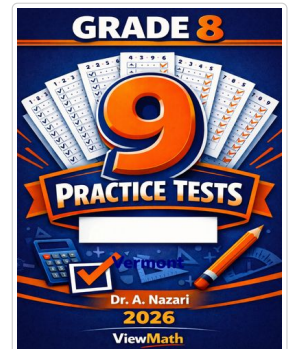
Scan Me



7 Practice Tests



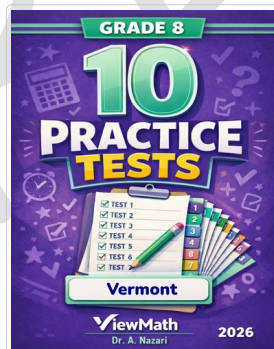
Scan Me



9 Practice Tests



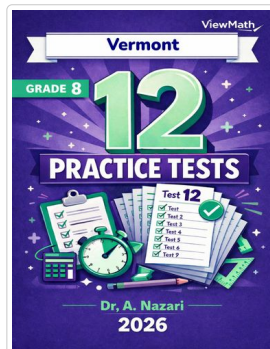
Scan Me



10 Practice Tests



Scan Me



12 Practice Tests



Scan Me



Find more at [ViewMath.com/Grade8](http://ViewMath.com/Grade8)



THANK YOU

# Enjoyed This Preview?

## Get the Full Book!

*This preview shows just a small sample of what's inside.*

*The complete book includes:*

- ✓ *All chapters and topics*
- ✓ *Hundreds of practice problems*
- ✓ *Complete answer key with explanations*
- ✓ *Colorful visuals and step-by-step examples*
- ✓ *Reference sheets and progress trackers*

 Visit us at [ViewMath.com](https://www.viewmath.com) for free resources and more books!