MODULE

4

Nonproportional Relationships

Module Quiz: D

1. This table shows a proportional relationship.

x	-4	-2	0	2	4
у	-14	-7	0	7	14

What is the constant ratio, $\frac{y}{y}$?

- A –4
- В -7
- C 3.5
- 2. Which line has a positive slope and a positive *y*-intercept?



- A line A
- B line B
- C line C

Use this situation for 3-4.

A repairman works 70 hours. He charges \$75 plus \$40 per hour.

- 3. Which equation shows this situation?
 - A y = 40x + 75
 - B y = 75x + 40
 - C y = 70x + 75
- 4. What is the initial value, the cost when the time is 0 hours?
 - A 0
 - B 40
 - C 75

- 5. What does the graph of a proportional relationship look like?
 - A a straight line through (0, 0)
 - B a vertical line through (10, 0)
 - C a horizontal line through (0, 10)
- 6. Which is not a proportional relationship?
 - A y = x

B
$$y = x + 2$$

C
$$y = 2x$$

7. These two lines are graphs of nonproportional relationships. What makes them nonproportional?



- A They are not straight.
- B They do not go through the origin.
- C They do not show a constant ratio.
- 8. What is thirty-four thousand in scientific notation?
 - $A \quad 3.4\times 10^4$
 - $B \quad 3.4\times 10^5$
 - $C \quad 34\times 10^5$

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MODULE **Nonproportional Relationships** 4

9. A company prints T-shirts. They charge \$40 plus \$12 per shirt. So, the cost for *n* shirts is $40 + (12 \times n)$. Complete the table that shows this situation.

Shirts	1	2	3	4
Cost (\$)				

10. The *y*-intercept is the value of *y* when *x* equals 0. What is the y-intercept of the line with the equation y = 2x + 8?

y-intercept:

11. What is the slope of the line that goes through (0, 0) and (6, 3)?

slope =

Use this grid for 12–13.



12. Graph y = 2x - 3 using the slope and *y*-intercept.

slope = _____ y-intercept: ____

13. Graph x - y = 3 by making a table of ordered pairs.

x		
У		

14. Which line shows a proportional relationship? Explain whv.



15. Steve starts with \$250 and spends \$25 a week. Chelsea starts with \$30 and saves \$30 a week. Use x for time and y for savings. Complete the equations that represent these situations.

Steve: y = 250 -

Chelsea: y = +30x

16. The graphs show the equations from Exercise 15.



Is either of the relationships proportional? Explain.

π

17. Compare. Write >, <, or =.

 $\sqrt{15}$

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Module Quiz 3: D

- 1. B
- 2. B
- 3. C
- 4. B
- 5. A
- 6. B
- о. Б 7. В
- 1.D
- 8. A

9	

Time (weeks)	10	20	25
Savings (\$)	100	200	250

10. *y* = 10*x*

11. \$40/h

12.
$$\frac{4}{3}$$

13. 5 m/s

14. Object A. The line has a steeper slope.

15. 50 mi

16. 0.000017 m

MODULE 4 Nonproportional Relationships

Module Quiz 4: B

- 1. D
- 2. D
- 3. B
- 4. D
- 5. A
- 6. C
- 7. C
- 8. A
- 9.

9.						
	Shirts	1	5	10	50	
	Cost (\$)	52	100	160	640	
10. $-\frac{1}{2}$, -3						
11.	11. 1, –1					
12.	$-\frac{4}{3}$, 2					

13. Sample answer:

X	0	1	2	5
у	-2	-1.6	-1.2	0





- 14. linear: B, C, D; proportional: B
- 15. Steve: y = 250 25x; Chelsea: y = 30x + 30
- 16. Students will graph one of these lines depending on which equation they chose.





Module Quiz 4: D

- 1. C
- 2. B
- 3. A
- 4. C
- 5. A 6. B
- 7. B
- 8. A

9. A

Shirts	1	2	3	4
Cost (\$)	52	64	76	88
		-	-	

10. 8

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

12. 2, -3

13. Sample answer:

x	0	1	2	3
У	-3	-2	-1	0

12. and 13.



- 14. line B; It is a straight line passing through (0, 0).
- 15. y = 250 25x; y = 30x + 30
- 16. No, neither line goes through origin.

17. >

MODULE 5 Writing Linear Equations

Module Quiz 5: B

1. C 2. A 3. B 4. C 5. C 6. y = 4x - 77. y = 2x - 18. y = -2x + 29. $y = \frac{1}{2}x - 2$ 10. $m = -\frac{5}{2}$ 11. y = 2x + 412. y = -2x + 313. \$12.04/h Module Quiz 5: D

1. C 2. B 3. A 4. C 5. B 6. C 7. C 8. B 9. y = x - 210. $m = \frac{2}{3}$ 11. *d* = 3*t* 12. $m = -\frac{1}{2}$ 13. 12, 14, 16 14. y = x + 115. b = -116. c = 6t17. Answers will vary, but must be of the form y = a, where a is a constant, e.g. y = 1. 18. $\frac{1}{5}$

MODULE 6 Functions

Module Quiz 6: B

- 1. D
- 2. B
- 3. D
- 4. A
- 5. A
- 6. B
- 7. The equation for Claire's account is y = -15x + 480. Marshall pays \$18 per month. Claire pays \$15. So, Claire's dues are \$3 cheaper per month.
- 8. After 32 months Claire's account will equal \$0. After about 30.6 months Marshall's account will equal \$0. So Claire can pay her dues for more months.

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