

الأسئلة الموضوعية MCQ 15 main questions 4 Marks per main question



1	Find unit rates when one		1 - 8	pg.11				
	lve each problem. Use any strategy, such as a bar diagram, uble number line, ratio table, or division.							
At	truck driver drove 48 miles in 45 minutes. It this rate, how many miles can the truck river drive in one hour? (Example 1)	2. Russell runs $\frac{9}{10}$ mile in 5 minutes. At this rate, how many miles can he run in one minute? (Example 1)	3.	A small airplane flew 104 50 minutes. At this rate, can it fly in one hour? (5 (Example 1)	how many miles			
in 1 cou	Andre downloaded 8 apps onto his tablet 2 seconds. At this rate, how many apps all the download in one minute? $seconds = \frac{1}{5} minute) \text{ (Example 1)}$	5. In Lixue's garden, the green pepper plants grew 5 inches in $\frac{3}{4}$ month. At this rate, how many feet can they grow in one month? (Let 5 inches = $\frac{5}{12}$ foot) (Example 2)		Thunder from a bolt of lig $\frac{1}{10}$ mile in $\frac{1}{2}$ second. At thi miles can it travel in one s	s rate, how many			

7. The average sneeze can travel $\frac{3}{100}$ mile in 3 seconds. At this rate, how far can it travel in one minute? (3 seconds = $\frac{1}{20}$ minute) (Example 2)

Test Practice

8.	her softball tea yard of fabric. S	m. She nee Select all ty	making headbands for the needs a total of $\frac{3}{4}$ at all types of fabric that er yard. (Example 2) Total Cost	
	cotton	Fabric	3	
	flannel		for $\frac{3}{4}$ Yard (\$)	1

__ fleece __ terry cloth

Fabric	Total Cost for $\frac{3}{4}$ Yard (\$)
Cotton	5.54
Flannel	2.62
Fleece	4.27
Terry Cloth	6.52

2	Determine whether two quantities shown in a table are in a proportional relationship by testing for equivalent ratios						onal	1 - 10	Pg.29 & 30				
rela	each situation, co tionship? Explain. The cost of a school				given. D		the situation represe		š.				
(1	Example 1)					25,032	12 blocks in 8 minute						
	Lunches Bought	1	2	3	4		Number of Blocks	12	24	36	48		
-	Total Cost (\$)		12.23	3.55			Number of Minutes		755-2556	178275			
p	un Center rents pe er hour. In addition ere is a rental fee	n to th	e hou	rly cha	arge,	4	1. Jean has \$280 in h Starting next week her account every	, she	will de	eposit	t \$30 in		
	Hours 1	2	2	3	4		Weeks	1	2	3	4		
	Cost (\$)						Savings (\$)						

2	Determine whether two quantities shown relationship by testing for e		1 - 10	Pg.29 & 30
5.	Rocko paid \$12.50 for 25 game tickets. Louisa paid \$17.50 for 35 game tickets. What is the constant of proportionality? (Example 3)	6. A baker, in 70 minutes, iced 40 cup and, in 49 minutes, iced 28 cupcak is the constant of proportionality?	ces. What	
		Test Practice		
7.	The table shows the amount of dietary fiber in bananas. Use the table to find the constant of proportionality. (Example 4)	8. Open Response The table shows distance traveled by a runner. Use to find the constant of proportional	the table	
	Dietary Fiber (g) 9.3 18.6 27.9 37.2	Distance (mi) 4.55 13.65 22.79	5 31.85	

Bananas

3

6

9

12

Time (h)

0.5

1.5

2.5

3.5

Determine whether two quantities shown in a table are in a proportional

10. The table shows the cost to mail various letters based on different weights. Is the cost of mailing a letter proportional to the weight? If so, what would be the cost of mailing a 6-ounce letter? If not, explain.

2

1.7	1
Mailing	y Costs
Weight (oz)	Cost (\$)
1	0.47
2	0.68
3	0.89
4	1.10

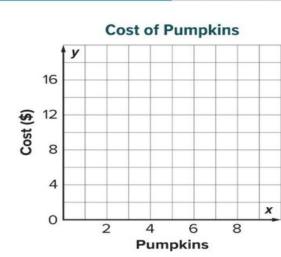
40

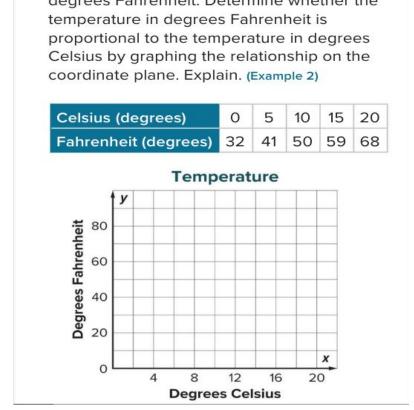
7.20

1 - 10

Pg.29 & 30

3 Explain what the points (0, 0) and (1, r) mean on the graph of a proportional 1 - 4 relationship 2. The table shows temperatures in degrees 1. The cost of pumpkins is shown in the table. Celsius and their equivalent temperatures in Determine whether the cost of a pumpkin is degrees Fahrenheit. Determine whether the proportional to the number bought by temperature in degrees Fahrenheit is graphing the relationship on the coordinate proportional to the temperature in degrees plane. Explain. (Example 1) Celsius by graphing the relationship on the coordinate plane. Explain. (Example 2) **Number of Pumpkins** 0 2 3 4 Cost (\$) 0 8 4 12 16 Celsius (degrees) 15 20 0 5 10



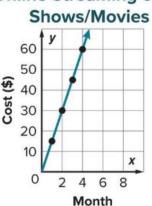


Pg.39

3. The total cost of online streaming is proportional to the number of months. What

is the constant of proportionality? (Example 3) Online Streaming of TV

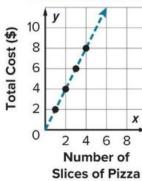
3



Test Practice

4. Open Response The cost per slice of pizza is proportional to the number of slices as shown in the graph. What do the points (0, 0) and (1, 2) represent? (Example 4)

Pizza Slices Cost



6 - 9

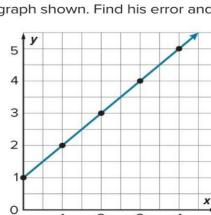
Pg.40

W Identify Repeated Reasoning Suppose a relationship is proportional and the point (4, 10) lies on the graph of the proportional relationship. Name another point, other than (0, 0), that lies on the graph of the line.

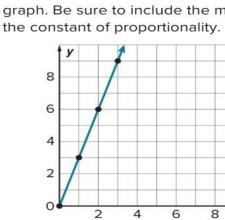
can have a constant rate and not be proportional. Write an argument to defend your response.

relationship is shown. Describe a real-world

Find the Error Karl said the point (1, 1) represents the constant of proportionality for the graph shown. Find his error and correct it.



situation that could be represented by the graph. Be sure to include the meaning of 8 6



Create The graph of a proportional

4. Last month, the online price of a powered ride-on car was \$250. This month, the online price is \$330. What is the percent of increase for the price of the car? (Example 1)

5

Nathan had carried the ball for 50.5 yards. By the end of the game, he carried the ball for a total of 75 yards. Find the percent of increase in the number of yards he carried. Round to the nearest whole tenth if necessary. (Example 1)

6. A music video website received 5.000 comments on a new song they released. The next day, the artist performed the song on television and an additional 1.500 comments were made on the website. What was the percent of increase? (Example 1)

he is 62 inches tall. Find the percent of increase in Ricardo's height to the nearest tenth. (Example 1)

inches tall. Ricardo is now 12 years old and

1- 10

Pg.71

8. At a garage sale, Petra priced her scooter for \$15.50. She ended up selling it for \$10.75. Find the percent of decrease in the price of the scooter. Round to the nearest tenth if necessary. (Example 2)

9. At the beginning of a baking session, there were 2.26 kilograms of flour in the bag. By the end of the baking session, there was 0.98 kilogram of flour in the bag. What is the percent of decrease, rounded to the nearest tenth, for the amount of flour? (Example 2)

Pg.71

Test Practice

10. Open Response The table shows the number of candid pictures of students for the yearbook for two consecutive years. What was the percent of decrease in the number of candid student pictures from 2015 to 2016, rounded to the nearest tenth?

Year	Number of Photos
2015	236
2016	214

7	Use the simple interest formula to find the amount of interest earned for a given principal, at a given interest rate, for a given period of time			Pg.105
6.	Marc deposits \$840 into a savings account. The account pays 2% simple interest on an annual basis. If he does not add or withdraw money from the account, how much interest will he earn after 6 months? Round to the nearest cent. (Example 2)	7. Nina's grandmother deposits \$3,000 savings account for her. The account 5.5% simple interest on an annual bashe does not add or withdraw money the account, how much interest will safter 21 months? Round to the neares (Example 2)	pays sis. If from the earn	
8.	Jack borrows \$2,700 at a rate of 8.2% per year. How much simple interest will he owe if it takes 3 months to repay the loan? Round to the nearest cent. (Example 3)	9. Liliya's parents borrow \$1,400 from the for a new washer and dryer. The interests 7.5% per year. How much simple into they pay if they take 18 months to repail loan? Round to the nearest cent. (Example 1)	est rate erest will ay the	

Use the simple interest formula to find the amount of interest earned for a given principal, at a given interest rate, for a given period of time

18 months. How much simple interest will he owe if it takes

18 months to repay the loan? Round to the nearest cent.

Pg.105

1- 10

4.0

4.25

12 months

18 months

Pq.119

Solve each problem.

8

1. Doug estimates that his soccer team will win 7 games this year. The team actually wins 10 games. What is the percent error of Doug's estimate? Round the answer to the nearest. tenth percent, if necessary. (Example 1)

2. A mayor estimates that 4,000 people will attend the first day of the county fair. A total of 8,400 people actually attend the first day of the fair. What is the percent error of the mayor's estimate? Round the answer to the nearest tenth percent, if necessary. (Example 1)

- **3.** Maya estimates that the wait time for her favorite roller coaster is 35 minutes. The actual wait time is 55.5 minutes. What is the percent error of Maya's estimate? Round the answer to the nearest tenth of a percent, if necessary. (Example 1)
- **4.** Oliver estimates the weight of his cat to be 16 pounds. The actual weight of his cat is 14.25 pounds. What is the percent error of Oliver's estimate rounded to the nearest tenth of a percent? (Example 1)

Pg.119

1-8

- **5.** A jar of marbles should contain 100 marbles. The jar actually has 99 marbles. What is the percent error to the nearest hundredth of a percent? (Example 1)
- 6. A cyclist estimates that he will bike 80 miles this week. He actually bikes 75.5 miles. What is the percent error of the cyclist's estimate rounded to the nearest hundredth of a percent? (Example 1)

7. The table shows the predicted and actual amount of snow for a local city. What is the percent error for the amount of snowfall? Round the answer to the nearest tenth of a percent if necessary. (Example 1)

	Snowfall (inches)
Predicted	6.75
Actual	10.25

Test Practice

- 8. Multiple Choice Jin's mother estimates there is a half gallon of fruit punch remaining in the container. There is actually 72 ounces of fruit punch in the container. What is the percent error of Jin's mother's estimate, rounded to the nearest tenth?
 - (A) 11.1%
 - (B) 36%

 - © 88.9%
 - (D) 144%

9	Use different methods, including algebra to add in		17 - 20	Pg.138
17	 What value of x would result in the numerical value of zero for each expression? a. −10 + 11 + x 	18. Find a Counterexample Patrick statement is not true.	d a	
	b. $7 + x + (-10)$			
	c. $x + 1 + (-1)$			
19	 Explain how you know that the sum of 2, 3, and −2 is positive without computing. 	20. Create Write and solve a real-world problem where you add three integers a the sum is negative.	and	

10		Jse different methods, including algebra tiles, number lines, or the additive inverse, to subtract integers		
10	 Evaluate a - b if a = 10 and b = -7. (Example 3) 	11. Evaluate $x - y$ if $x = -11$ and y (Example 3)	y = 26.	
12	2. Find the distance between —6 and 7 on a number line. (Example 4)	13. Find the distance between –1 number line. (Example 4)	4 and 5 or	n a

Starting Point

Ending Point

Use different methods, including algebra tiles, number lines, or the additive

and ending elevations of a hiking trail. How

than the starting point for the trail?

much greater is the elevation of the ending point

10-15

180 ft below sea level

260 ft above sea level

Pq.147

10

13	Convert fractions to decimal equivaler	nts using division	1 - 12	Pg.183
	te each fraction as a decimal. Determine if the decimal is a temples 1 and 2)	erminating decimal.		
1.	$\frac{5}{8}$ 2. $-\frac{3}{4}$	3. $\frac{2}{9}$		
4.	$-\frac{5}{6}$ 5. $-\frac{4}{5}$	6. $\frac{23}{50}$		
7	$-\frac{9}{22}$ 8. $\frac{17}{24}$	9. $-\frac{1}{33}$		
	22 24	33		
10.	$-\frac{11}{40}$ 11. $\frac{7}{32}$	12. $-\frac{3}{7}$		

12.

Subtract rational numbers by adding the additive inverse

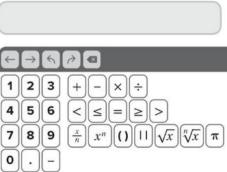
12. $-\frac{7}{10} - \left(-\frac{4}{15}\right)$

13. Evaluate x - y if $x = -5\frac{1}{4}$ and y = -6.8. Write your answer in simplest form. (Example 3)

15. Evaluate s - t if $s = \frac{1}{4}$ and t = -1.75. Write your answer in simplest form. (Example 3)

Test Practice

14. Equation Editor Evaluate a - b if a = -2.5 and $b = \frac{2}{5}$. Write your answer in simplest form.



Pg.201



10 - 15





Number of FRQ عدد الأسئلة المقالية	5



Write equations to represent proportional relationships and identify the constant

Apply

16

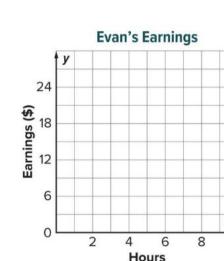
8. Roman can type 3 pages in 60 minutes. How many more pages can Roman type in 90 minutes than in 60 minutes? Assume the relationship is proportional and he types at a constant rate.

20 free throws. Assuming the relationship is proportional, how many more free throws is she likely to make if she shoots 150 free

8-13

Pg.48

10. Evan earned \$26 for 4 hours of babysitting. What equation can be used to model his total earnings y for babysitting x hours? Then graph the equation on the coordinate plane. What is the unit rate? How is that represented on the graph?



16	Write equations to represent proportional relationships and identify the constant of proportionality in the equation representing a proportional relationship	8-13	Pg.48
11	Persevere with Problems The Diaz family spent \$38.25 on 3 large pizzas. What is the cost of one large pizza? Assume the situation is proportional. Explain how you solved.		
12	2. Use a Counterexample Determine whether the statement is true or false. If false, give a counterexample. The constant of proportionality in an equation can never be 0.		
13	3. Justify Conclusions A recipe for homemade modeling clay includes $\frac{1}{3}$ cup of salt for every cup of water. If there are 6 cups of salt, how many gallons of water are needed? Identify the constant of proportionality. Explain your reasoning.		

17	Solve problems involving proportional relationships by making a table, using a graph, or writing an equation.	7-12	Pg.56
	Apply		
	7. The ratio of kids to adults at a school festival is 11 : 7. Suppose there are a total of 810 kids and adults at the festival. How many adults are at the festival?		
	8. The ratio of laptops to tablets in the stock room of a store is 13:17. If there are a total of 90 laptops and tablets in the stock room, how many laptops are in the stock room?		

7-12

Pg.56

painting the exterior surfaces at her home.

A gallon of paint will cover 350 square feet.

How many gallons of paint will Lisa need to paint one side of her fence? Explain how you solved.

17

Item to Paint	Length (ft)	Width (ft)
Fence	26	7
Barn Door	11	6

student found the number of days for the plant to grow 3.6 centimeters to be 1.44 days. Find the error and correct it.

- **11. Create** Write a real-world problem involving a proportional relationship. Then solve the problem.
- 12. Be Precise When is it more beneficial to solve a problem involving a proportional relationship using an equation than using a graph?

18	Use proportional relationships to find the amount of tax charged for an item .		1 - 9
	6. Mr. Phuong stayed in a hotel room for 2 nights that cost \$210. The hotel room tax rate in the city is 12%. What is the total cost for the hotel room? (Example 2)	7. The cost of a hotel room during Lacy's trip is \$325. The hotel room tax in the city she is in is 10.5%. What is the total cost of the hotel room? (Example 2)	
		Test Practice	
	8. Robert spends \$30.45, before tax, at the bookstore. If the sales tax rate in his city is 7.25%, what is the total cost of his purchase? (Example 3)	9. Multiple Choice Anya purchased \$124.35 worth of home improvement items at the hardware store. If the sales tax rate in her city is 6.75%, what is the total cost of her purchase? (Example 3)	
		(A) \$131.10	
		B \$8.39	
		© \$115.96	
		① \$132.74	

Pg.81

18	Use proportional relationships to find the amount to pay for a tip and the amount of markup on items	1 - 5	Pg.89				
Fir	Find the total cost to the nearest cent. Use any strategy. (Examples 1 and 2)						
1.	 \$20 haircut; 10% tip \$24 lunch; 15% tip \$185 TV; 5% markup 						
4.	Note that to the local salon to get a haircut. The cost was \$24. Vera tipped the hair stylist 18%. What was the total cost of haircut including the tip? Round to the nearest cent. (Example 1) 5. The Gomez family ordered \$30 pizza and subs. They gave the a 20% tip. What was the total cost of and tip? Round to the nearest cent. (Example 1)	delivery pe ost of the fo	rson ood				

sale price of the game system. Round to the nearest cent. (Example 1)

6. During a clearance sale at a sporting goods store, skateboards were marked down 30%. On Saturday, an additional 25% was taken off already reduced prices of skateboards. If

a skateboard originally cost \$119.50, what

was the final price after all discounts had

been taken? Round to the nearest cent.

(Example 2)

(Example 1)

7. At an electronics store, a smart phone is on sale for 35% off the original price of \$679. If you use the store credit card, you can receive an additional 15% off the sale price. What is the final price of the smart phone if you use the store credit card? Round to the nearest cent. (Example 2)

- 8. Gary had a 40% discount for new tires. The sale price of a tire was \$96.25. What was the original price of the tire? Round to the nearest cent. (Example 3)
- 9. A swimsuit is on sale for \$45.50. If the sale price is discounted 5% from the original price, what was the original price? Round to the nearest cent. (Example 3)

Test Practice

18

10. Open Response A shoe store is having a clearance sale on their summer shoes. All summer shoes are marked 55% off. A sign states you can take an additional 10% off the clearance sale prices. Kelly is deciding between two pairs of sandals shown in the table. If she buys the blue sandals, what is the final price Kelly will pay? Round to the nearest cent.

Shoes	Original Price
Blue Sandals	\$75
Tan Sandals	\$68

Pq.97 & 98

1 - 12

Apply

11. A recreational outlet has two trampolines on sale. The table shows the original prices. The Skye Bouncer is discounted 15% and the Ultimate is discounted 13%. If the sales tax rate is 7.5%, which trampoline has the lower sale price? How much will you save by buying that trampoline? Round to the nearest cent.

Trampoline Model	Original Price (\$)	
Skye Bouncer	1,480	
Ultimate	1,450	

12. Pets Plus and Pet Planet are having a sale on the same aquarium. At Pets Plus the aquarium is on sale for 30% off the original price and at Pet Planet it is discounted by 25%. If the sales tax rate is 8%, which store has the lower sale price? How much will you save by buying the aquarium there? Round to the nearest cent.

Store	Original Price of Aquarium (\$)
Pets Plus	118
Pet Planet	110

Pg.170

15 - 20

Apply

15. The table shows the extreme temperatures for different U.S. cities in degrees Fahrenheit. Use the expression $\frac{5(F-32)}{9}$, where F represents the temperature in degrees Fahrenheit to convert each temperature to degrees Celsius. Which city had the greatest difference in temperature extremes in degrees Celsius? Which city had the least? Round to the nearest

degree. Explain.

City	Low Extreme (°F)	High Extreme (°F)
Chicago	-27	104
Nashville	-17	107
Oklahoma City	-8	110

16. The table shows the yearly initial and ending balance for each sibling in a family for their account balance with their parents. Use the expression $\frac{I-E}{12}$ where I represents the initial balance and where E represents the ending balance, to find the average difference between the initial balance and ending balance each month. Which sibling had the greatest monthly change?

Sibling	Initial Balance	Ending Balance
Alma	\$226	-\$50
Laurel	\$200	-\$64
Wes	\$290	\$2

19	Use the order of integer operations to evaluate expressions		15 - 20	Pg.170
	17. Find the Error A student solved the problem shown below. Find the student's mistake and correct it. Find $-3(-6)(-4) - (-9)$. $(18)(-4) - (-9) = (-72) - (-9)$ $= -81$	18. Create Write and solve a real-world problem in which you perform more than one operation with integers.		
	19. When simplifying 5(-2)(9) - 3, a student first subtracted 3 from 9. Is this the correct first step? Explain.	20. Identify Structure When simplifying -7(3)(-10) + (-4), can you multiply 3 and -10 first and get the same result as multiplying -7 and 3 first? Explain.		

20

Pg.212

15. The table shows the change in the value of Rudo's stocks one day. The next day, the value of the All-Plus stock dropped $\frac{1}{4}$ of the amount it changed from the previous day. What was the total change in the All-Plus stock? Round to the nearest cent.

Stock	Change
All-Plus	-\$2.50
rue-Fit	-\$3.75

15 - 20

16. The table shows the temperature at midnight in Fink Creek, Alaska. At 5 A.M., the temperature changed by $\frac{1}{2}$ of the current value. What is the temperature at 5 A.M.?

Time	Temperature (°F)	
12:00 A.M	-13.4	
5:00 A.M	?	

The product of a fraction between 0 and 1 and a whole number or mixed number is never less than the whole number or mixed

20. Estimate the product of 2.6 and $3\frac{7}{10}$. Then

could you improve the estimate?

find the actual product. Are the estimate and the actual product different? If so, how

counterexample.

number.

15 - 20

Pg.212

a. $-\frac{6}{11} \cdot {\binom{x}{y}} = -\frac{1}{11}$

b. $\frac{a}{b} \cdot \left(-\frac{4}{5}\right) = -\frac{1}{10}$

less than $\frac{1}{4}$. Explain.

17. Reason Inductively Find two rational

19. Persevere with Problems Find the missing fraction for each problem.

numbers greater than $\frac{1}{4}$ whose product is

