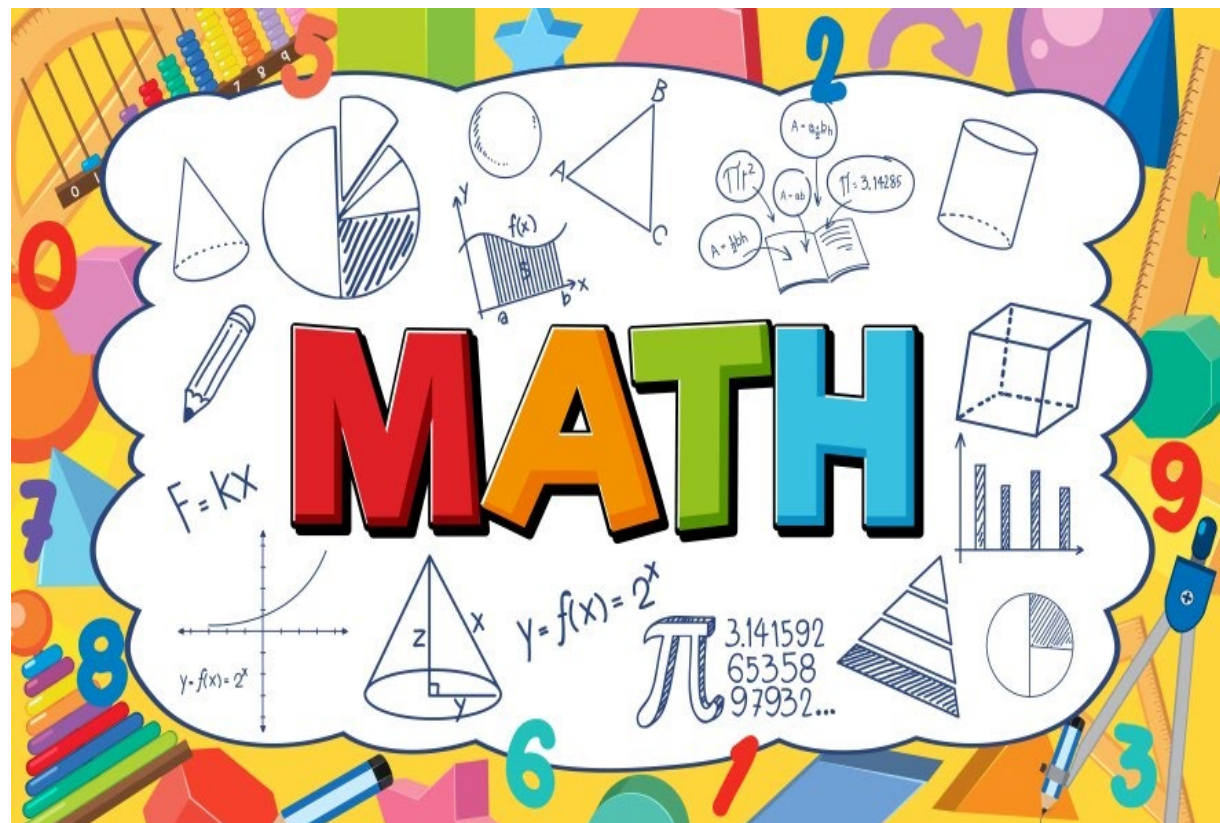


EOT Answers Grade 7 Reveal 2025-26T1



Principal : Ms.Moza AlMansoori

Grade : 7

Teacher: Ms Lija Xavier

Solve each problem. Use any strategy, such as a bar diagram, double number line, ratio table, or division.

1. A truck driver drove 48 miles in 45 minutes. At this rate, how many miles can the truck driver drive in one hour? (Example 1)

$$45 \text{ min} = \frac{3}{4} \text{ hr}$$

$$48 \div \frac{3}{4} \Rightarrow \frac{48}{1} \times \frac{4}{3} = 64 \text{ mile per 1 hr}$$

3. A small airplane flew 104 miles in 50 minutes. At this rate, how many miles can it fly in one hour? (50 minutes = $\frac{5}{6}$ hour) (Example 1)

$$104 \div \frac{5}{6} \Rightarrow 104 \times \frac{6}{5}$$

$$= \frac{624}{5} \text{ mile per hour}$$

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)

$$\frac{5}{9} \div \frac{3}{4} \rightarrow \frac{5}{9} \times \frac{4}{3} = \frac{20}{27} \text{ ft every one month}$$

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)

$$\frac{3}{100} \div \frac{1}{20} \Rightarrow \frac{3}{100} \times \frac{20}{1}$$

$$\frac{3}{5} \times 1 = \frac{3}{5} \text{ mile in one minute}$$

2. Russell runs $\frac{9}{10}$ mile in 5 minutes. At this rate, how many miles can he run in one minute? (Example 1)

$$\frac{9}{10} \div 5 \Rightarrow \frac{9}{10} \times \frac{1}{5} = \frac{9}{50} \text{ mile in one min}$$

4. DeAndre downloaded 8 apps onto his tablet in 12 seconds. At this rate, how many apps could he download in one minute? (12 seconds = $\frac{1}{5}$ minute) (Example 1)

$$8 \div \frac{1}{5} = 8 \times \frac{5}{1} = 40 \text{ app in 1 min}$$

6. Thunder from a bolt of lightning travels $\frac{1}{10}$ mile in $\frac{1}{2}$ second. At this rate, how many miles can it travel in one second? (Example 2)

$$\frac{1}{10} \div \frac{1}{2} = \frac{1}{10} \times 2 = \frac{2}{10} = \frac{1}{5} \text{ mile in one second}$$

Test Practice

8. **Multiselect** Anita is making headbands for her softball team. She needs a total of $\frac{3}{4}$ yard of fabric. Select all types of fabric that cost less than \$8 per yard. (Example 2)

- ☒ cotton
☒ flannel
☒ fleece
☐ terry cloth

Fabric	Total Cost for $\frac{3}{4}$ Yard (\$)
Cotton	$5.54 \div \frac{3}{4} = 7.38 < 8$
Flannel	$2.62 \div \frac{3}{4} = 3.49 < 8$
Fleece	$4.27 \div \frac{3}{4} = 5.69 < 8$
Terry Cloth	$6.52 \div \frac{3}{4} = 8.69 > 8$



Gayathi Common School(2065)

Use words and ratio reasoning to determine how a proportional relationship can exist between quantities.

Determine if each situation represents a proportional relationship. Explain your reasoning. (Examples 1 and 2)

- A salad dressing calls for 3 parts oil and 1 part vinegar. Manuela uses 2 tablespoons of vinegar and 6 tablespoons of oil to make her salad dressing.

vinegar *oil* *proportional*

$\frac{1}{2} = \frac{3}{6}$

$2 \times 3 = 6 = 1 \times 6 = 6$
- A specific shade of orange paint calls for 2 parts yellow and 3 parts red. Catie uses 3 cups of yellow paint and 4 cups of red paint to make orange paint.

yellow *red* *non-Proportional*

$\frac{2}{3} \neq \frac{3}{4}$

$2 \times 4 = 8 \neq 3 \times 3 = 9$
- A saltwater solution for an aquarium calls for 35 parts salt to 1000 parts water. Tareq used 7 tablespoons of salt and 200 tablespoons of water.

salt *water* *proportional*

$\frac{35}{7} = \frac{1000}{200}$

$7 \times 1000 = 7000 = 35 \times 200 = 7000$
- A conveyor belt moves at a constant rate of 12 feet in 3 seconds. A second conveyor belt moves 16 feet in 4 seconds.

feet *seconds* *proportional*

$\frac{12}{3} = \frac{16}{4}$

$16 \times 3 = 48 = 12 \times 4 = 48$
- A tectonic plate in Earth's crust moves at a constant rate of 4 centimeters per year. In a different part of the world, another tectonic plate moves at a constant rate of 30 centimeters in ten years.

cm *year* *non-proportional*

$\frac{4}{30} \neq \frac{1}{10}$

$30 \times 1 = 30 \neq 4 \times 10 = 40$
- Multiselect** One blend of garden soil is 1 part minerals, 1 part peat moss, and 2 parts compost. Select all of the mixtures below that are in a proportional relationship with this blend.

(1 : 1 : 2)

 - ☒ 5 ft³ minerals, 5 ft³ peat moss, 10 ft³ compost $1:1:2$
 - ☒ 10 ft³ minerals, 15 ft³ peat moss, 15 ft³ compost $1:1:2$
 - ☒ 12 ft³ minerals, 12 ft³ peat moss, 24 ft³ compost $1:1:2$
 - ☒ 20 ft³ minerals, 20 ft³ peat moss, 40 ft³ compost $1:1:2$
 - ☒ 100 ft³ minerals, 100 ft³ peat moss, 200 ft³ compost $1:1:2$
 - ☒ 50 ft³ minerals, 50 ft³ peat moss, 50 ft³ compost $1:1:1$

1. Liv earns \$9.50 for every two bracelets she sells. The equation $y = 4.75x$, where x represents the number of bracelets and y represents the total cost in dollars earned, represents this situation. What is the constant of proportionality? What does the constant of proportionality represent in the context of the problem? (Example 1)

① $y = 4.75x \rightarrow \text{COP} = 4.75$

② * Liv earns \$4.75 for every bracelet she sells. x

3. Lincoln bought 3 bottles of an energy drink for \$4.50. Write an equation relating the total cost y to the number of energy drinks bought x . (Example 2)

$y = KX \Rightarrow K = \frac{y}{x} = \frac{4.5}{3} = 1.5$
 $y = \text{total cost}$
 $x = \# \text{ of energy drinks}$
 $y = 1.5x$

5. Marley used $\frac{7}{4}$ cups of water to make 3 loaves of French bread. What equation can be used to model the total cups of water needed y for making x loaves of French bread? How many cups of water do you need for 6 loaves of French bread? (Example 3)

① $y = KX \rightarrow K = \frac{y}{x} = \frac{\frac{7}{4}}{3} = 1.75$
 $y = 1.75x$

② $y = 1.75 \times 6$
 $= 10.50 \text{ cups of water}$

2. John ran 3 miles in 25.5 minutes. The equation $y = 8.5x$, where x represents the number of miles and y represents the total time in minutes, represents this situation. What is the constant of proportionality? What does the constant of proportionality represent in the context of the problem? (Example 1)

① $y = 8.5x \rightarrow \text{COP} = 8.5$

② John takes 8.5 min to run 1 mile

4. The total cost of renting a cotton candy machine for x hours is \$72. What equation can be used to model the total cost y for renting the cotton candy machine x hours? (Example 2)

$y = \text{total cost}$ $x = \text{hours}$
 $y = KX \rightarrow K = \frac{y}{x} = \frac{72}{4} = 18$
 $y = 18x$

6. Mrs. Henderson used $6\frac{3}{4}$ yards of fabric to make 3 self costumes. What equation can be used to model the total number of yards of fabric y for x costumes? How many yards of fabric do you need for 7 self costumes? (Example 3)

① $y = KX \rightarrow K = \frac{y}{x} = \frac{6\frac{3}{4}}{3}$
 $y = 2.25x$

② if $x = 7$ find y
 $y = 2.25 \times 7$
 $= 15.75 \text{ yd.}$

$\frac{6\frac{3}{4}}{3} = \frac{\frac{27}{4}}{3} = \frac{27}{4} \div 3 = \frac{27}{4} \times \frac{1}{3} = \frac{27}{12} = \frac{9}{4} = 2\frac{1}{4}$



Gayathi Common School(2065)

Use proportional relationships to find the amount of tax charged for an item.

Find the total cost to the nearest cent. (Examples 1-3)

- \$18 breakfast; 7% tax

$$\frac{7}{100} \times \frac{t}{18} \Rightarrow t = \frac{7 \times 18}{100}$$

$$t = 1.26$$

$$\text{total cost} = 18 + 1.26 = \$19.26$$
- \$24 shirt; 6% tax

$$\frac{6}{100} \times \frac{t}{24} \Rightarrow t = \frac{6 \times 24}{100}$$

$$t = 1.44$$

$$\text{total cost} = 24 + 1.44 = \$25.44$$
- \$49.95 pair of shoes; 5% tax

$$\frac{5}{100} \times \frac{t}{49.95} \Rightarrow t = \frac{5 \times 49.95}{100}$$

$$t = 2.50$$

$$\text{total cost} = 49.95 + 2.50 = \$52.45$$
- Emily wants to buy new boots that cost \$68. The sales tax rate in her city is 5.5%. What is the total cost for the boots? (Example 1)

$$\frac{5.5}{100} \times \frac{t}{68} \Rightarrow t = \frac{5.5 \times 68}{100}$$

$$t = 3.74$$

$$\text{total cost} = 68 + 3.74 = \$71.74$$
- Jack wants to buy a coat that costs \$74.95. The sales tax rate in his city is 6.5%. What is the total cost for the coat? (Example 1)

$$\frac{6.5}{100} \times \frac{t}{74.95} \Rightarrow t = \frac{6.5 \times 74.95}{100}$$

$$t = 4.87$$

$$\text{total cost} = 74.95 + 4.87 = \$79.82$$
- 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)

$$\frac{10.5}{100} \times \frac{t}{325} \Rightarrow t = \frac{10.5 \times 325}{100}$$

$$t = 34.13$$

$$\text{total cost} = 325 + 34.13 = \$359.13$$
- 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)

$$\frac{7.25}{100} \times \frac{t}{30.45} \Rightarrow t = \frac{7.25 \times 30.45}{100}$$

$$t = 2.21$$

$$\text{total cost} = 30.45 + 2.21 = \$32.66$$

الإجابة النهائية



Gavathi Common School(2065)

Find the simple interest earned, to the nearest cent, for each principal, interest rate, and time. (Example 1)

must be in years.

$$I = Prt$$

1. \$530, 6%, 1 year

$$I = Prt$$

$$530 \times \frac{6}{100} \times 1$$

$$= \frac{318}{10} = \$31.8$$

2. \$1,200, 3.5%, 2 years

$$I = Prt$$

$$1200 \times \frac{3.5}{100} \times 2$$

$$= \$84$$

3. \$750, 7%, 3 years

$$I = Prt$$

$$750 \times \frac{7}{100} \times 3$$

$$= \$157.5$$

4. Elena's father put \$460 into a savings account for her. The account pays 2.5% simple interest each year. If he neither adds nor withdraws money from the account, how much interest will the account earn after 4 years? Round to the nearest cent. (Example 1)

$$I = Prt$$

$$460 \times \frac{2.5}{100} \times 4$$

$$\frac{460}{10} = \$46$$

$$I = Prt$$

$$460 \times \frac{2.5}{100} \times 4$$

$$= \$46$$

5. Ethan put \$1,250 into a savings account. The account pays 4.5% simple interest on an annual basis. If he does not add or withdraw money from the account, how much interest will he earn after 2 years? Round to the nearest cent. (Example 1)

$$I = Prt$$

$$1250 \times \frac{4.5}{100} \times 2$$

$$= \$112.5$$

$$I = Prt$$

$$1250 \times \frac{4.5}{100} \times 2$$

$$= \$112.5$$

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)

$$I = Prt$$

$$840 \times \frac{2}{100} \times \frac{1}{2}$$

$$= \$8.4$$

$$t = \frac{6 \text{ month}}{12}$$

convert to years

$$t = \frac{1}{2} \text{ year}$$

7. Nina's grandmother deposits \$3,000 into a savings account for her. The account pays 5.5% simple interest on an annual basis. If she does not add or withdraw money from the account, how much interest will she earn after 21 months? Round to the nearest cent. (Example 2)

$$I = Prt$$

$$t = \frac{21 \text{ month}}{12} = \frac{7}{4} = 1.75 \text{ years}$$

$$3000 \times \frac{5.5}{100} \times 1.75$$

$$= \$288.75$$

MCQ - الأسئلة



Gayathi Common School(2065)

Add. (Examples 1, 4, and 6)

1. $-3 + (-8)$ same sign (Add)
 $= -11$

2. $-11 + (-13)$ same sign (Add)
 -24

3. $9 + (-35)$ different sign (Subtract)
 -26

4. $-28 + 14$ different sign (Subtract)
 -14

5. $-22 + (-10) + 15$
 $-32 + 15$
 $= -17$

6. $18 + (-12) + 5$
 $23 + (-12)$
 $= 11$

7. Roger owes his father \$15. He borrows another \$25 from him. What integer represents the balance that he owes his father? (Example 2)

$$-15 + (-25) = -40$$

(same sign → add)

8. A football team lost 14 yards on their first play then lost another 7 yards on the next play. What integer represents the total change in yards for the two plays? (Example 2)

$$-14 + (-7) = -21$$

same sign (add)

9. Kwan's beginning account balance was \$20. His ending balance is \$0. What integer represents the change in his account balance from beginning to end? (Example 3)

$$20 + (-20) = 0$$

10. Lucy's dog lost 6 pounds. How much weight does her dog need to gain in order to have a net change of 0 pounds? (Example 3)

$$-6 + 6 = 0$$

11. The table shows Jewel's scores for the first 9 holes and the second 9 holes of her game of golf. What integer represents her score for the entire game? (Example 5)

Holes	Score
1-9	3 over par +3
10-18	4 under par -4

$$-4 + 3 = -1$$

12. At 4:00 A.M., the outside temperature was -28°F . By 4:00 P.M. that same day, it rose 38 degrees. What integer represents the temperature at 4:00 P.M.? (Example 5)

$$-28 + 38 = 10$$

(different sign → subtract)

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13. In 20 seconds, a roller coaster goes up a 100-meter hill, then down 72 meters, and then back up a 48-meter rise. How much higher or lower from the start of the ride is the coaster after the 20 seconds? (Example 7)

$$\begin{aligned} &+100 + (-72) + (+48) \\ &148 + (-72) \\ &= 76 \end{aligned}$$

14. **Open Response** Joe opened a bank account with \$80. He then withdrew \$35 and deposited \$115. What is his account balance after these transactions?

$$\begin{aligned} &80 + (-35) + 115 \\ &195 + (-35) = \$160 \end{aligned}$$

17 Use different methods, including algebra tiles, number lines, or the additive inverse, to subtract integers.

1-18

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Subtract. (Examples 1 and 2) *Keep → Change → opposite*

1. $9 + (-2)$
 7

2. $-20 + -10$
 -30

3. $13 + (+63)$
 76

4. $28 + -14$
 14

5. $-10 + 0$
 -10

6. $-33 + -33$
 -66

7. $-18 + (+12)$
 -6

8. $-28 + (+13)$
 -15

9. $-18 + (+40)$
 22

10. Evaluate $a - b$ if $a = 10$ and $b = -7$.
(Example 3)
 $a - b = 10 + (+7) = 17$

11. Evaluate $x - y$ if $x = -11$ and $y = 26$.
(Example 3)
 $x - y = -11 + -26 = -37$

12. Find the distance between -6 and 7 on a number line. (Example 4)
add
 $d = |a - b|$
 $= 6 + 7 = 13$

13. Find the distance between -14 and 5 on a number line. (Example 4)
add
 $|a - b| = 14 + 5 = 19$

Gayathi Common School(2065)



وزارة التربية والتعليم
MINISTRY OF EDUCATION

Use proportional relationships to solve percent of change problems.

Find each percent of change. Identify it as a percent of increase or decrease. (Examples 1-3)

- 8 feet to 10 feet
 $\frac{10 - 8}{8} \times 100 = 0.25 \times 100 = 25\%$ increase
- 62 trees to 31 trees
 $\frac{31 - 62}{62} \times 100 = -0.5 \times 100 = -50\%$ decrease
- 136 days to 85 days
 $\frac{85 - 136}{136} \times 100 = -0.375 \times 100 = -37.5\%$ decrease
- 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)
 $\frac{330 - 250}{250} \times 100 = 0.32 \times 100 = 32\%$
- 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)
 $\frac{6500 - 5000}{5000} \times 100 = \frac{1500}{5000} \times 100 = 30\%$
- 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)
 $\frac{15.50 - 10.75}{15.50} \times 100 = 0.306 \times 100 = 30.6\%$
- 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 old
2016	214 new

 $\frac{214 - 236}{236} \times 100 = -0.093 \times 100 = -9.3\%$

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Principal : Ms.Moza AlMansoori

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9 Determine whether two quantities shown in a table are in a proportional relationship by testing for equivalent ratios. 1-9 29

For each situation, complete the table given. Does the situation represent a proportional relationship? Explain.

1. The cost of a school lunch is \$2.50.

(Example 1)

Lunches Bought	1	2	3	4
Total Cost (\$)	2.5	5	7.5	10

$$\frac{2.5}{1} = 2.5$$

$$\frac{5}{2} = 2.5$$

$$\frac{7.5}{3} = 2.5$$

$$\frac{10}{4} = 2.5$$

proportional

2. Anna walks her dog at a constant rate of 12 blocks in 8 minutes.

(Example 1)

Number of Blocks	12	24	36	48
Number of Minutes	8	16	24	32

$$\frac{12}{8} = \frac{3}{2}$$

$$\frac{24}{16} = \frac{3}{2}$$

$$\frac{36}{24} = \frac{3}{2}$$

$$\frac{48}{32} = \frac{3}{2}$$

proportional

3. Fun Center rents popcorn machines for \$20 per hour. In addition to the hourly charge, there is a rental fee of \$35.

(Example 2)

Hours	1	2	3	4
Cost (\$)	55	75	95	115

$$\frac{55}{1} = 55$$

$$\frac{75}{2} = 37.5$$

non-proportional

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)

$$\frac{25}{12.5} = 2$$

$$\frac{35}{17.5} = 2$$

7. The table shows the amount of dietary fiber in bananas. Use the table to find the constant of proportionality.

(Example 4)

Dietary Fiber (g)	9.3	18.6	27.9	37.2
Bananas	3	6	9	12

$$\frac{9.3}{3} = 3.1$$

4. Jean has \$280 in her savings account. Starting next week, she will deposit \$30 in her account every week.

(Example 2)

Weeks	1	2	3	4
Savings (\$)	310	340	370	400

$$\frac{310}{1} = 310$$

$$\frac{340}{2} = 170$$

non-proportional

6. A baker, in 70 minutes, iced 40 cupcakes and, in 49 minutes, iced 28 cupcakes. What is the constant of proportionality?

(Example 3)

$$\frac{40}{70} = \frac{4}{7}$$

$$\frac{28}{49} = \frac{4}{7}$$

Test Practice

8. Open Response The table shows the distance traveled by a runner. Use the table to find the constant of proportionality.

Distance (mi)	4.55	13.65	22.75	31.85
Time (h)	0.5	1.5	2.5	3.5

$$\frac{4.55}{0.5} = 9.1$$



Gayathi Common School(2065)

12. Evaluate xyz^2 if $x = -2$, $y = 7$, and $z = -4$.
(Example 6)

$$xyz^2 = (-2) \times (7) \times (-4)^2$$

$$= -14 \times 16$$

$$= -224$$

13. Evaluate a^2bc if $a = 3$, $b = -14$, and $c = -6$. (Example 6)

$$a^2bc = (3)^2 \times (-14) \times (-6)$$

$$= 9 \times 84 = 756$$

14. Mrs. Rockwell lost money on an investment at a rate of \$4 per day. What is the change in her investment, due to the lost money, after 4 weeks? (Example 2)

$$-4 \times 28 = -112$$

She lost \$112 after 4 weeks

15. **Open Response** The table shows the number of questions answered incorrectly by each player on a game show. If each missed question is worth 7 points, what is the change in Olive's score due to the incorrect questions?

Player	Incorrect Questions
Laura	8
Olive	9

$$-7 \times 9 = -63$$

she lost 63 points

Divide. (Examples 1 and 3)

$$\begin{array}{l} (+) \div (+) = (+) \\ (-) \div (-) = (+) \\ (+) \div (-) = (-) \end{array}$$

1. $22 \div (-2)$
 $= -11$

2. $-110 \div 11$
 $= -10$

3. $75 \div (-3)$
 $= -25$

4. $+64 \div (+8)$
 $= 8$

5. $+39 \div (+13)$
 $= 3$

6. $+50 \div (+10)$
 $= 5$

Evaluate each expression if $m = -32$, $n = 2$, and $p = -8$. (Example 4)

7. $\frac{m}{n}$
 $\frac{-32}{2} = -16$

8. $\frac{m}{p}$
 $\frac{-32}{-8} = 4$

9. $\frac{p}{n}$
 $\frac{-8}{2} = -4$

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Gayathi Common School(2065)

23	Subtract rational numbers by adding the additive inverse.	2-02	281
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Subtract. Write in simplest form. (Examples 1 and 2) Keep - change - opposite.

1. $-2.45 + (-3.9)$ different sign (subtract)

$$\begin{array}{r} 3.90 \\ -2.45 \\ \hline 6.35 \end{array}$$

4. $-6.2 + -3.79$ Same sign (Add)

$$\begin{array}{r} 6.20 \\ +3.79 \\ \hline 9.99 \end{array}$$

7. $-\frac{7}{8} + -2\frac{1}{6}$ Same sign (Add)

$$-\frac{7}{8} + -\frac{13}{6} = -\frac{21}{24} + -\frac{52}{24} = -\frac{73}{24} = -3\frac{1}{24}$$

10. $\frac{5}{6} + (-\frac{3}{4})$

$$\frac{10}{12} + \frac{9}{12} = \frac{19}{12} = 1\frac{7}{12}$$

2. $-4.6 + (-2.31)$ different sign (subtract)

$$\begin{array}{r} 4.60 \\ +2.31 \\ \hline 6.91 \end{array}$$

5. $7\frac{5}{12} - (-3\frac{3}{4})$

$$\frac{89}{12} + \frac{15}{4} = \frac{89}{12} + \frac{45}{12} = \frac{134}{12} = \frac{67}{6}$$

8. $-\frac{8}{15} + -3\frac{4}{5}$

$$-\frac{8}{15} + -\frac{19}{3} = -\frac{8}{15} + -\frac{95}{15} = -\frac{103}{15}$$

11. $\frac{2}{3} + (-\frac{1}{2})$

$$-\frac{4}{6} + \frac{3}{6} = -\frac{1}{6}$$

3. $5.47 + (+2.8)$ Same sign (Add)

$$\begin{array}{r} 5.47 \\ +2.80 \\ \hline 8.27 \end{array}$$

6. $5\frac{9}{10} + (-8\frac{2}{5})$

$$\frac{59}{10} + \frac{42}{5} = \frac{59}{10} + \frac{84}{10} = \frac{143}{10} = 14\frac{3}{10}$$

9. $-9\frac{7}{10} + (-14\frac{3}{5})$

$$-\frac{97}{10} + \frac{28}{2} = -\frac{97}{10} + \frac{140}{10} = \frac{43}{10} = 4\frac{3}{10}$$

12. $\frac{3}{10} + (-\frac{4}{15})$ different sign (subtract)

$$-\frac{21}{30} + \frac{8}{30} = -\frac{13}{30}$$

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Apply ¹Indicates multi-step problem

- ¹¹ Louise bought a frame and canvas online for \$125. Then she bought the supplies shown in the table and paid a 7% sales tax on these supplies only. She took the amount that she spent on the canvas, frame, and supplies, and marked up the price by 115%. How much did she charge for her painting? Round to the nearest cent.

Item	Cost (\$)
Brushes	12.50
Paint	19.50

\$342.37

- ¹² Brendan has \$65 worth of balloons and flowers delivered to his mother. He pays the bill plus an 8.5% sales tax and an 18% tip on the total cost including tax. He also pays a \$10 delivery fee that is charged after the tax and tip. How much change does he receive if he pays with two \$50 bills? Round to the nearest cent.

\$6.78

Higher-Order Thinking Problems

- ¹³ Toru takes his dog to be groomed. The fee to groom the dog is \$70 plus a 10% tip. Is \$80 enough to pay for the service and tip? Explain your reasoning.

yes; Sample answer: The total would be \$77, which is less than \$80.

- ¹⁴  **Use a Counterexample** Determine if the following statement is true or false. If false, provide a counterexample.

It is impossible to increase the cost of an item by less than 1%.

false; Sample answer: An item costs \$1,000 and you want to mark it up by 0.1%. Multiply \$1,000 by 0.001. The new price is $\$1,000 + \$1$, or \$1,001.

Name _____

Period _____

Date _____

Practice

Go Online You can complete your homework online.

Find the sale price to the nearest cent. Use any strategy. (Example 1)

1. \$140 coat; 10% discount

\$126.00

2. \$80 boots; 25% discount

\$60.00

3. \$325 tent; 15% discount

\$276.25

4. A toy store is having a sale. A video game system has an original price of \$99. It is on sale for 40% off the original price. Find the sale price of the game system. Round to the nearest cent. (Example 1)

\$59.40

5. A yearly coffee club subscription costs \$65. Avery received an offer for 62% off the subscription cost. What is the sale price of the subscription? Round to the nearest cent. (Example 1)

\$24.70

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)

\$62.74

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)

\$375.15

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)

\$160.42

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)

\$47.89**Test Practice**

- 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

\$30.38

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Practice

Go Online You can complete your homework online.

Solve each problem. Use any strategy, such as a bar diagram, ratio table, or division.

1. Mrs. Hollern works in a jewelry store and earns an 8.5% commission on every piece of jewelry she sells. How much commission would she earn for selling a necklace that costs \$4,600? (Example 1)

\$391

3. Chase wants to earn at least \$900 this month in commission. What is the minimum amount he needs to sell in order to earn \$900 if he earns a 3.3% commission on everything he sells? Round to the nearest dollar. (Example 2)

\$27,273

5. Mrs. Jackson needs to earn \$3,000 a month. How much does she need to sell if she earns 15% commission on everything she sells? (Example 2)

\$20,000

7. The table shows the shipping fee options for two online marketplaces. If you sell a smart phone online for \$115, which is the lesser fee? (Example 3)

Online Market	Shipping Fees
Deals	Flat fee of \$12
Sell UR Stuff	11% of selling price

\$12

2. Booker's father sells computer software and earns a 4.25% commission on every software package he sells. How much commission would he earn on a software package that sold for \$15,725? Round to the nearest cent. (Example 1)

\$668.31

4. Sophie needs to earn at least \$1,800 each month to cover her living expenses. What is the minimum amount she needs to sell in order to earn at least \$1,800 if she earns a 10.75% commission on everything she sells? Round to the nearest dollar. (Example 2)

\$16,745

6. Raymond purchases concert tickets online for \$43.50. There is a 3% processing fee. What is the total cost of the tickets? Round to the nearest cent. (Example 3)

\$44.81**Test Practice**

8. **Multiple Choice** Mai bought some party supplies from an online store. The shop charges a \$7.95 shipping fee or 6.25% of the total purchase, whichever is greater. Suppose Mai's total purchase is \$128. How much shipping will she pay?

- (A) \$7.95
☒ (B) \$8.00
 (C) \$15.95
 (D) \$16.00

Student Name:

Date:

الأسئلة الموضوعة - MCQ

13 Use number lines and mathematical properties to multiply integers

1 to 9

157

Lesson 3-3 Multiply Integers

Multiply. (Examples 1, 3, and 5)

1. $4(-7)$

2. $-14(5)$

3. $9(-12)$

4. $-6(-8)$

5. $-10(-10)$

6. $-11(-13)$

7. $7(-5)(4)$

8. $(-8)(-7)(3)$

9. $-2(-12)(-8)$

14	Use the order of integer operations to evaluate expressions	1 to 6	169
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Lesson 3-5 Apply Integer Operations

Evaluate each expression. (Examples 1 and 2)

1. $-5(6) + (-9)$

2. $\frac{-36}{9} + (-7)$

3. $-4(-8) + (-10)$

4. $2(-5)(-6) - (-12)$

5. $10(-3)(4) - (-15)$

6. $2\left(\frac{-80}{4}\right) - 14$

Lesson 4-1

Rational Numbers

Write each fraction as a decimal. Determine if the decimal is a terminating 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. $-\frac{1}{33}$

10. $-\frac{11}{40}$

11. $\frac{7}{32}$

12. $-\frac{3}{7}$

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Practice

Go Online You can complete your homework online.

Find the additive inverse of each rational number. (Example 1)

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

2. 0.25 -0.25

3. $\frac{9}{10}$ $-\frac{9}{10}$

4. -0.4 0.4

5. Quinn earned \$24.50 dog-sitting and \$12.70 for recycling cans. Find the total amount he earned and describe a situation in which Quinn ends the week with zero dollars. (Example 2)

\$37.20; Sample answer: Quinn gave \$37.20 to his brother for his mother's birthday gift.

Add or Subtract. Write in simplest form. (Examples 3, 4, 6, 7)

6. $3\frac{5}{6} + (-1\frac{1}{6})$
 $2\frac{2}{3}$ or $2.\bar{6}$

7. $-\frac{2}{3} + 2\frac{2}{3}$
 $1\frac{17}{24}$ or $1.708\bar{3}$

8. $-3.7 + \frac{1}{4}$
 -3.45 or $-3\frac{9}{20}$

9. $\frac{5}{3} + 4.1$
 $4\frac{17}{30}$ or $4.4\bar{3}$

10. $-1\frac{1}{8} + 0.75 + 0.45$
 -0.05 or $-\frac{1}{20}$

11. $-2.45 - (-3.9)$
 1.45 or $1\frac{9}{20}$

12. $5.47 - (-2.8)$
 8.27 or $8\frac{27}{100}$

13. $7\frac{5}{6} - (-3\frac{3}{4})$
 $11\frac{1}{4}$ or 11.25

14. $-\frac{7}{8} - 2\frac{1}{6}$
 $-3\frac{1}{24}$ or $-3.041\bar{6}$

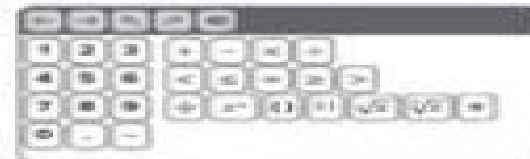
15. Marlee is making jewelry for a class craft show. She began with 115 inches of wire. She used 25.75 inches for rings. Then her teacher gave her $30\frac{1}{2}$ inches of wire to make more jewelry. She then used $39\frac{1}{2}$ inches for the bracelets and 60.2 inches for necklaces. How much wire does Marlee have left? (Example 5)

20.8 in. or $20\frac{4}{5}$ in.

Test Practice

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

-2.9 or $-2\frac{9}{10}$



Practice

 **Go Online** You can complete your homework online.

Multiply or divide. Write the product or quotient in simplest form. (Examples 1-3, 6-7)

1. $-\frac{1}{2} \left(-\frac{4}{5} \right)$
 $\frac{2}{5}$

2. $\frac{4}{5} \left(-2\frac{3}{4} \right)$
 $-3\frac{3}{5}$

3. $2\frac{1}{10} \left(-6\frac{2}{3} \right)$
 $-7\frac{9}{16}$

4. $-\frac{1}{6} (2.4)$
 $-\frac{2}{5}$ or -0.4

5. $-\frac{5}{7} \div \frac{3}{14}$
 -4 or $-\frac{4}{1}$

6. $\frac{2}{3} \div \left(-\frac{4}{9} \right)$
 $-\frac{3}{2}$

7. $2\frac{1}{2} \div \left(-2\frac{2}{3} \right)$
 $-\frac{5}{3}$

8. $-3\frac{4}{10} \div \left(-2\frac{1}{3} \right)$
 $1\frac{10}{3}$

9. $-5\frac{1}{4} \div \frac{7}{8}$
 -6 or $-\frac{6}{1}$

Evaluate each expression if $x = -\frac{2}{3}$, $y = 0.6$, and $z = -1\frac{7}{8}$. Write the product in simplest form. (Examples 4 and 5)

10. $\frac{1}{2}xy$
 $-\frac{1}{10}$ or -0.1

11. $-\frac{4}{5}xz$
 -1 or $-\frac{1}{1}$

12. $-yz$
 $-\frac{3}{4}$ or -0.75

13. Evaluate $\frac{x}{y}$ if $x = \frac{4}{10}$ and $y = -0.1$. Write your answer in simplest form. (Example 3)
 -4 or $-\frac{4}{1}$

14. Evaluate $\frac{c}{d}$ if $c = -4.75$ and $d = -1\frac{1}{4}$. Write your answer in simplest form. (Example 3)
 $3\frac{4}{5}$ or 3.8

Test Practice

15. **Equation Editor** Evaluate $\frac{1}{2}xyz$ if $x = -8.4$, $y = 0.25$, and $z = 3\frac{4}{5}$. Write your answer in simplest form.

-3.99 or $-3\frac{99}{100}$



Divide. Write your answer in simplest fraction form.

1. $-\frac{6}{7} \div \frac{3}{14}$

2. $-\frac{3}{4} \div \left(-\frac{1}{2}\right)$

3. $\frac{2}{3} \div \left(-\frac{4}{9}\right)$

4. $-\frac{4}{7} \div \frac{8}{9}$

5. $-\frac{3}{5} \div \left(-\frac{3}{4}\right)$

6. $-5\frac{3}{4} \div \left(2\frac{1}{16}\right)$

7. $7\frac{1}{2} \div \left(-2\frac{5}{6}\right)$

8. $-3\frac{4}{9} \div \left(-2\frac{1}{3}\right)$

9. $2\frac{2}{3} \div \left(-1\frac{1}{6}\right)$

10. $-3\frac{2}{5} \div \left(-5\frac{1}{10}\right)$

11. $-5\frac{1}{4} \div \frac{7}{8}$

12. $8\frac{1}{3} \div \left(-\frac{5}{9}\right)$

Name _____

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Date _____

Practice

Go Online You can complete your homework online.

Evaluate each expression if $a = \frac{7}{8}$, $b = -\frac{3}{10}$, $c = 0.8$, $d = \frac{1}{4}$. (Example 1)

1. $\frac{a}{b} - c + d$

-2.55 or $-2\frac{11}{20}$

2. $a + b + cd$

0.6375 or $\frac{51}{80}$

3. $c - a + \frac{b}{d}$

-1.825 or $-1\frac{33}{40}$

4. $\frac{a}{c} + \frac{b}{d}$

2.7 or $2\frac{7}{10}$

5. $d^2 - b$

0.5 or $\frac{1}{2}$

6. $a + \frac{b}{c} - d$

0.078125 or $\frac{5}{64}$

Evaluate each expression if $a = \frac{7}{10}$, $b = \frac{3}{5}$, $c = -1.9$, and $d = -\frac{1}{5}$.
Write your answer in simplest form. (Example 2)

7. $\frac{1}{2}(a - b) + c$

-1.85 or $-1\frac{17}{20}$

8. $0.25(a + b) - d$

0.525 or $\frac{21}{40}$

9. $b + 0.2(c - d)$

0.26 or $\frac{13}{50}$

10. $(b + d) - a$

-0.3 or $-\frac{3}{10}$

11. $b^2 + \frac{1}{10}(d - b)$

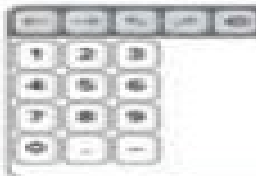
0.28 or $\frac{7}{25}$

12. $b + \frac{c}{d}$

10.1 or $10\frac{1}{10}$

Test Practice13. **Equation Editor** Evaluate $4.5(xy) - \frac{2}{3}$ if $x = 12$ and $y = \frac{2}{3}$.

33.6



25	Subtract rational numbers by adding the additive inverse	Learn 1 to 12	197 201
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Lesson 4-3 Subtract Rational Numbers

Learn Subtract Rational Numbers

To subtract rational numbers in different forms, write the numbers in the same form.

The animation shows how to rewrite a problem using decimals. This method works if the mixed number can be rewritten as a terminating decimal.

Rewrite Using Decimals	
Steps	Example
1. Write the mixed number or fraction as a decimal.	$2\frac{2}{5} - 6.55 = 2\frac{4}{10} - 6.55$ $= 2.4 - 6.55$
2. Subtract the decimals.	$= 2.4 + (-6.55)$ $= -4.15$

The animation also shows how to rewrite a problem using fractions or mixed numbers. This method works when the fraction or mixed number cannot be written as a terminating decimal.

Rewrite Using Fractions or Mixed Numbers	
Steps	Example
1. Write the decimal as a fraction or mixed number.	$4.6 - 2\frac{2}{3} = 4\frac{6}{10} - 2\frac{2}{3}$ $= 4\frac{3}{5} - 2\frac{2}{3}$
2. Rewrite fractions with a common denominator.	$= 4\frac{9}{15} - 2\frac{10}{15}$
3. Subtract the fractions or mixed numbers.	$= 3\frac{24}{15} + (-2\frac{10}{15})$
4. Simplify if necessary.	$= 1\frac{14}{15}$

Use the chart below to find out how to subtract rational numbers written in different forms.

Words

Example



Thank You