Entering Grade 8 Summer Math 2026

If you choose to complete this packet instead of the “Khan Get Ready for Grade 8”, please return your completed packet to your teacher in the Fall. Your goal is to complete **8 out of 11 assignments**.

Assignment: Adding and subtracting rational numbers (7.NS.A.1 set B)

1) What is the value of the expression below?

   -3 - (-6) + 9

2) The maximum temperature on the planet Mercury is 950°F. The minimum temperature is -346°F. What is the difference in temperatures?

3) Point A is located at -7 on a number line, and point B is located at 3 on the number line. Point C is the same distance away from point A as point B is from point A, but in the opposite direction. Which is the location of point C on the number line?
   a) -17
   b) -10
   c) -4
   d) -3

4) Which of the following is equivalent to 8 - 6?
   a) 8 + 6
   b) 6 - 8
   c) 8 + (-6)
   d) 8 - (-6)

5) Simplify the following:

   30 + (-30)

Assignment: Multiplying integers (7.NS.A.2c-1)

1) What is the product of a non-zero number *n* and it's reciprocal?

2) *Use the equation below to answer the following question:*

   -3xy = 45

   Which of the following statements is true?

   a) Only x is negative.
   b) Only y is negative.
   c) Both x and y are negative.
   d) Either x or y is negative.

3) If an odd number of negative numbers are multiplied together, which of the following is true about their product?
   a) it will be even
   b) it will be negative
   c) it depends on the numbers being multiplied
   d) it will be odd
   e) it will be positive

4) If an even number of negative numbers are multiplied together, which of the following is true about their product?
   a) It will be positive
   b) It will be odd
   c) It depends on the numbers being multiplied
   d) It will be negative
   e) It will be even

5) Simplify the expression below.

   (4)(-x)(-y)

Assignment: Multiplying and dividing rational numbers (7.NS.A.2 set B)

1) Which of the following situations *best* describes a context for the equation 12 x -6 = -72?
   a) Jana lent 6 friends $12 each.

b) Jana sold 12 necklaces for $6 each.
c) Jana borrowed $12 from each of 6 friends.
d) Jana spent $6 on each of 12 paperback books.

2) Which of the following fractions converts to a repeating decimal?
   a) 7/8
   b) -16/33
   c) 3/10
   d) -14/25

3) Kalil works at a fruit stand. He takes a crate containing 100 oranges and places them in 5 boxes with 20 oranges in each box. Which equation *best* describes what Kalil does?
   a) 5 x 20 = 100
   b) -20 x -5 = 100
   c) 100 ÷ 5 = 20
   d) 100 ÷ -20 = -5

4) Which of the following fractions is equivalent to 5/8?
   a) -30/-48
   b) 25/64
   c) -10/16
   d) 5/-8

5) Which of the following fractions converts to a terminating decimal?
   a) 7/9
   b) 11/8
   c) 1/15
   d) 8/11

Assignment: Computing unit rates (7.RP.A.1 set A)

1) It took a ball 3 minutes to roll 184 feet. What was this ball's average speed, in feet per second? (round to the nearest hundredth)

2) It took a car 5 days to travel 1459 miles. What was this car's average speed, in miles per hour? (round to the nearest mile per hour)

3) John bought 7 pens for $12.88. What is the cost of one pen?

4) Booker T. Washington Middle School found two companies that would deliver healthy snacks to school. The tables below show the price charged by each company.

How many more times does **Company B** charge per snack than **Company A**?

Company A:

# of Snacks	Cost ($)
1	0.25
2	0.50
3	0.75
4	1.00

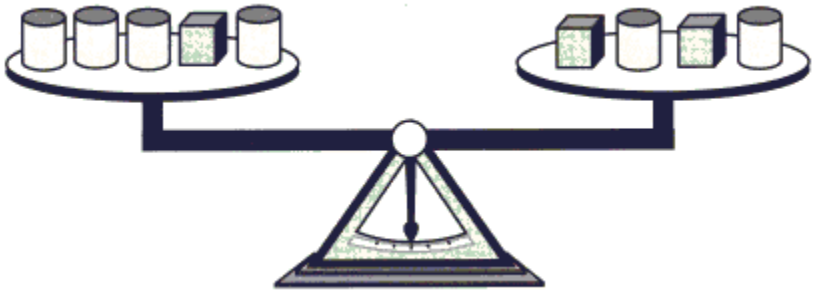
Company B:

# of Snacks	Cost ($)
1	0.50
2	1.00
3	1.50
4	2.00

Assignment: Recognizing proportional relationships (7.RP.A.2a)

1) Use the balance scale below to answer the question.

Which of the following shows the relationship between the weights of one cylinder and one cube?



a) One cube weighs the same as two cylinders.
b) One cube weighs the same as four cylinders.
c) One cylinder weighs the same as two cubes.
d) One cylinder weighs the same as four cubes.

2) The marketing department of a shoe store determined that the number of pairs of shoes sold varies inversely with the price per pair. A total of 36,000 pairs of sneakers sold at price of $40 per pair. Approximately how many pairs of sneakers would the store expect to sell if the price were $30 per pair?

a) 900 pairs
b) 48,000 pairs
c) 108,000 pairs
d) 27,000 pairs

3) During an experiment, a marine biologist recorded the length and mass of a sample of one type of fish. The measures for four of the fish in her sample are shown in the table below.

Length and Mass of Fish

Length (in centimeters)	Mass (in grams)
10	148
15	223
20	295
25	368

The marine biologist found that the relationship between the length and mass of this type of fish could best be represented by a linear model. Based on the linear model for the data in the table, which of the following is closest to the mass of a fish with a length of 50 centimeters?

a) 75 grams
b) 438 grams
c) 739 grams
d) 1465 grams

Assignment: Recognizing and representing proportional relationships (7.RP.A.2 set B)

1) Yin likes to ride her bike on the weekends. She keeps track of how long she rides and the distance of each ride. The table below shows some of her trips.

trip number	time spent riding (hours)	distance traveled (miles)
1	0.5	6
2	2.0	12
3	3.5	42
4	5.0	60

Which trips represent the same proportional relationship?

a) 1, 2, 3
b) 2, 3, 4
c) 1, 3, 4
d) 1, 2, 4

2) Jason wants to make enough chili to serve 26 people. His recipe serves 6 people and requires 13 ounces of water. Based on this recipe, how many ounces of water is required to serve 26 people?
   a) 73
   b) 3 ounces
   c) 46 1/3 ounces
   d) 56 1/3 ounces

3) George is shooting free throws before basketball practice. He makes 18 out of the 20 shots he attempts. How many shots would you expect him to make if he attempted 100 free throws?

Assignment: Using proportional relationships to solve multi-step ratio and percent problems (7.RP.A.3 set A)

1) Lake Chad in Africa had a surface area of about 10,000 square miles in 1963. Because of climate changes and increased water usage by humans, the surface area decreased to about 850 square miles in 2001. By what percent did the surface area change from 1963 to 2001?

2) In 2000, about $155 billion was spent by teenagers in the United States. In 2001, the amount spent by teenagers increased by about 11%. About how many billions of dollars did teenagers spend in 2001?

3) Two different websites offer the same watch for sale. The watch costs $45 on both sites. The site, Watches for Less charges a shipping fee of 4% of the cost of the watch. The site, Tick Tock charges 2.5% of the cost of the watch for shipping. How much less will the total cost of the watch be if purchased from Tick Tock? Round your answer to the hundredths place.

4) The Massachusetts Department of Employment and Training predicted that there will be 21% more jobs for computer programmers in Massachusetts in 2005 than there were in 1994. There were 15,970 programming jobs in 1994. Based on the prediction, about how many total jobs were there available in 2005?
    a) 335,370
    b) 19,324
    c) 15,991
    d) 3,350

5) Sari opened a savings account with $150.00. The account earns interest at a rate of 6% compounded annually. The table below shows her account balance at the end of each of the first three years.

Year	1	2	3
Balance	$159.00	$168.54	$178.65

If Sari makes no additional deposits or withdrawals, which of the following will be closest to her account balance at the end of year 6?

    a) $184.65
    b) $189.37
    c) $200.73
    d) $212.77

Assignment: Adding, subtracting, factoring, and expanding linear expressions with rational coefficients (7.EE.A.1 set A)

1) Simplify the following:

   (3x - 6) + (5x - 5)

2) Simplify the following:

   3x - 7 + 3x - 9

3) Simplify the following:

   4x - 8y + 7x - 5y - 4x + 5x

4) Simplify the following:

   (10x - 2y) - (2x - 7x)

5) Use the distributive property to multiply the expression.

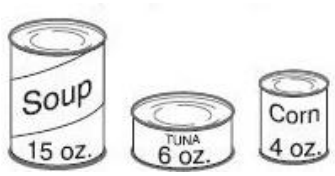
   10(1m + 3)

Assignment: Understanding equivalent expressions in context (7.EE.A.2 set A)

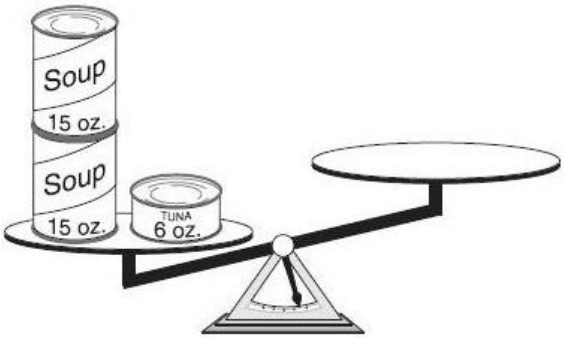
1) How many cylinders must be placed on the empty side of the second scale to make that scale balance?

2) If 4 + 2(3x - 4) = 8, then 3x - 4 equals _____.

3) Look at this soup can, tuna can, and corn can.

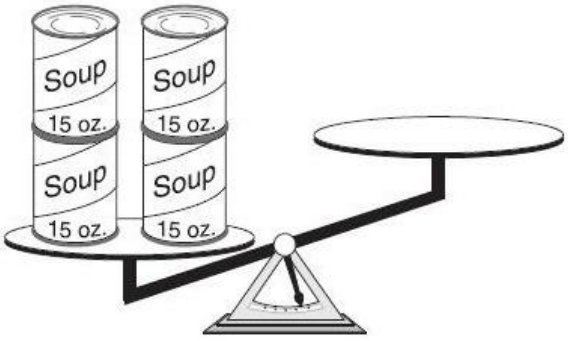


a) Suzi put exactly 2 soup cans and 1 tuna can on the left side of this balance scale.



How many corn cans does Suzi need to put on the right side to balance the scale?

b) Nathan will put exactly 4 soup cans on the left side of this balance scale.



- Nathan will put only tuna and corn cans on the right side.
- He will put at least one corn can and one tuna can on the right side.

How many tuna cans and how many corn cans could Nathan put on the right side to balance the scale?

4) If $5x - 8 = 7$, what is the value of $5x + 8$?
    a) 15
    b) -7
    c) 0
    d) 23

5) If $7x + 3 = 17$, what is the value of $7x - 3$?
    a) -3
    b) 0
    c) 14
    d) 11

Assignment: Solving multi-step problems with rational numbers (7.EE.B.3-1 set A)

1) Natalie bought a book that was on sale for 25% off. The regular price of the book was $18. What was the sale price of the book?

2) The regular price of a CD player is $74. It is on sale for 20% off. Which of the following is closest to the sale price?
   a) $40
   b) $50
   c) $60
   d) $70

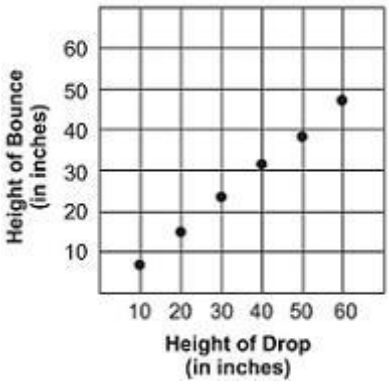
3) The camping equipment store is offering a 20% discount this weekend on each of the camping items listed in the chart.

Camping Equipment Prices

Item	Price
Tent	$250
Sleeping bag	$100
Boots	$55
Cooking kit	$35

After the 20% discount, and before tax is added, what is the price of the tent?

4) Linda and Kwame dropped a rubber ball from various heights and measured the height of the first bounce. They recorded their data in this graph. Which statement is true based on their data?



a) The ball bounces about 5 inches less than the height from which it was dropped.

b) The ball bounces about $1\frac{1}{3}$ times as high as the height from which it was dropped.

c) The ball bounces about $\frac{3}{4}$ as high as the height from which it was dropped.

d) The ball bounces about 5 inches higher than the height from which it was dropped.

5) Colin plans to order three types of skateboard parts. He plans to order a total of ten parts. He can order online (over the Internet) from Tony's Skateboard Shop. Colin's online order from Tony's Skateboard Shop is shown in the order form below. The subtotal amount is the total cost of all ten parts before any discount or tax. What is the *Subtotal* amount for the ten parts that Colin plans to order before the discount is applied?

Tony's Skateboard Shop Order Form			
Type of Part	**Price per Unit**	**Units Ordered**	**Cost**
Truck	$8.95	2	
Wheel	$6.95	4	
Package of Bearings	$2.45	4	
		Subtotal	
		Online Discount	–$2.00
		Subtotal After Discount	
		Sales Tax (5% of the Subtotal After Discount)	
		Total Payment Due	

6) Colin's subtotal for his skateboard parts is $55.50. By ordering online from Tony's Skateboard Shop, Colin is entitled to an Online Discount of $2.00 off the Subtotal amount. Sales Tax of 5% is added to the Subtotal After Discount. What is the Total Payment Due if Colin orders online from Tony's Skateboard Shop? Please round to the nearest penny.

Tony's Skateboard Shop Order Form			
Type of Part	**Price per Unit**	**Units Ordered**	**Cost**
Truck	$8.95	2	17.90
Wheel	$6.95	4	27.80
Package of Bearings	$2.45	4	9.80
		Subtotal	55.50
		Online Discount	–$2.00
		Subtotal After Discount	
		Sales Tax (5% of the Subtotal After Discount)	
		Total Payment Due	

7) A group of 36 people from the Nantucket Recreation Center plans to purchase tickets for a cruise to Bermuda. The standard fare for an individual ticket is shown below. The group is informed that, because of the size of the group, the standard fare will be reduced by 30%. With the discount of 30%, how many dollars does each member of the Nantucket Recreation Center have to pay for a cruise ticket?

Cruise Price

	Standard Fare
Individual Ticket Price	$1200

8) The regular price of a computer game is $49.95. Which of the following sale prices would result in the lowest price for the computer game?
   a) $8 less than the regular price
   b) 1/4 reduction on the regular price
   c) 85% of the regular price
   d) 20% discount on the regular price

Assignment: Solving equations in two steps or fewer (7.EE.B.4a set B)

1) What value of *a* makes the equation below true? **-12 + (-3a) = 0**
    a) -5
    b) 4
    c) -4
    d) 5

2) What does x equal in this equation? **x + 4 = 2**

3) What does x equal in this equation? **x + 5 = 1**

4) When 7 is subtracted from a number four times, the result is 3. What is the number?

5) Which of the following describes one way to solve this equation? **12 - 3*x* = 5**
    a) Add 3*x* to both sides, then divide both sides by 3.
    b) Subtract 3*x* from both sides, then multiply both sides by 3.
    c) Subtract 12 from both sides, then divide both sides by -3.
    d) Add 12 to both sides, then multiply both sides by -3.

6) What does x equal in the equation below? **4x - 2 = 10**