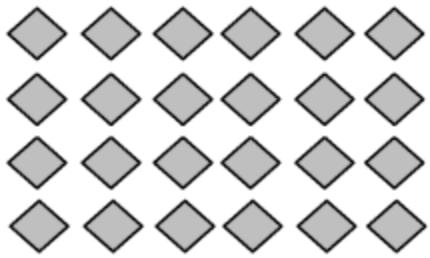
Name: _____ Date: _____

1. Use the array to write two different multiplication sentences.



_____ × _____ = _____

_____ × _____ = _____

2. Complete the equations.

a. 2 sevens = _____ twos

= _____

b. 3 _____ = 6 threes

= _____

c. 10 eights = 8 _____

= _____

d. 4 x 6 = 6 x _____

= _____

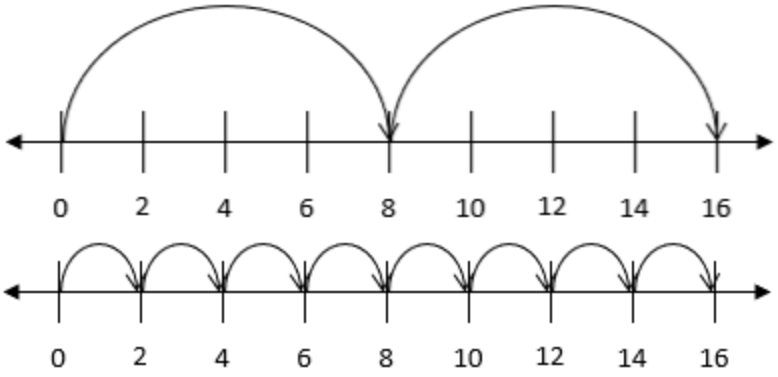
e. 8 x 5 = _____ x 8

= _____

f. _____ x 7 = 7 x _____

= 28

3. Use the number lines to write two different multiplication sentences.



_____ × _____ = _____

_____ × _____ = _____

4. Solve.

a. $5 \times 9 = a$

b. $21 \div 7 = b$

c. $24 \div c = 4$

d. $28 = d \times 7$

e. $32 = e \times 8$

f. $f \div 10 = 7$

g. $8 = 80 \div g$

h. $18 \div h = 9$

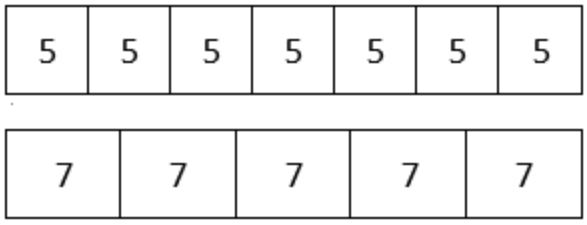
i. $4 = 36 \div i$

j. $35 = 7 \times j$

k. $8 = k \div 3$

l. $l \times 6 = 18$

5. Use the tape diagrams to write two different multiplication sentences.



_____ × _____ = _____

_____ × _____ = _____

6. Below is a table showing how to multiply numbers from 2 to 4:

×	2	3	4
2	4	6	8
3	6	9	12
4	8	12	16

   a. What do you notice about numbers that have the same shade?

b. Let's say that the squares that match up when you fold along the line are "mirror images" of each other.

The table below shows how to multiply numbers 1 through 9. It only includes the facts we've learned so far. Two squares have numbers that are **bolded** and two squares have numbers that are underlined:

×	1	2	3	4	5	6	7	8	9	10
1										
2		4	6	8	10	12	14	16	18	20
3		6	9	12	15	18	**21**	24	27	30
4		8	12	16	20	24	28	32	36	40
5		10	15	20	25	30	35	40	45	50
6		12	18	24	30					60
7		14	**21**	28	35					70
8		16	24	32	40					80
9		18	27	36	45					90
10		20	30	40	50	60	70	80	90	100

Are the bolded squares mirror images of each other? Explain why the numbers in the bolded squares are equal.

c. Are the underlined squares mirror images of each other? Explain why the numbers in the underlined squares are equal.

d. Shade the rest of the mirror image squares with the same color. Why are the mirror image numbers always equal?

Sources

1. EngageNY Mathematics Grade 3 Mathematics > Module 3 > Topic A > Lesson 1 — Problem Set, Question #2 Grade 3 Mathematics > Module 3 > Topic A > Lesson 1 of the New York State Common Core Mathematics Curriculum from EngageNY and Great Minds. © 2015 Great Minds. Licensed by EngageNY of the New York State Education Department under the CC BY-NC-SA 3.0 US license. Accessed Dec. 2, 2016, 5:15 p.m.. Modified by Fishtank Learning, Inc.

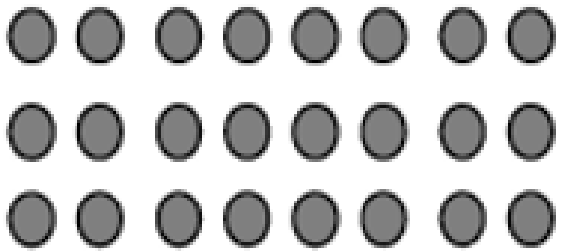
2. EngageNY Mathematics Grade 3 Mathematics > Module 3 > Topic A > Lesson 1 — Problem Set, Question #3 Grade 3 Mathematics > Module 3 > Topic A > Lesson 1 of the New York State Common Core Mathematics Curriculum from EngageNY and Great Minds. © 2015 Great Minds. Licensed by EngageNY of the New York State Education Department under the CC BY-NC-SA 3.0 US license. Accessed Dec. 2, 2016, 5:15 p.m.. Modified by Fishtank Learning, Inc.

4. EngageNY Mathematics Grade 3 Mathematics > Module 3 > Topic A > Lesson 3 — Problem Set, Question #1 Grade 3 Mathematics > Module 3 > Topic A > Lesson 3 of the New York State Common Core Mathematics Curriculum from EngageNY and Great Minds. © 2015 Great Minds. Licensed by EngageNY of the New York State Education Department under the CC BY-NC-SA 3.0 US license. Accessed Dec. 2, 2016, 5:15 p.m.. Modified by Fishtank Learning, Inc.

6. Illustrative Mathematics *Symmetry of the addition table*
Symmetry of the addition table, accessed on Oct. 31, 2018, 11:36 a.m., is licensed by Illustrative Mathematics under either the CC BY 4.0 or CC BY-NC-SA 4.0. For further information, contact Illustrative Mathematics. Modified by Fishtank Learning, Inc.

Name: _____ Date: _____

1. Use the array to write two different multiplication sentences.



_____ × _____ = _____

_____ × _____ = _____

2. Complete the equations.

a. 2 sixes = _____ twos

= _____

b. _____ x 6 = 6 threes

= _____

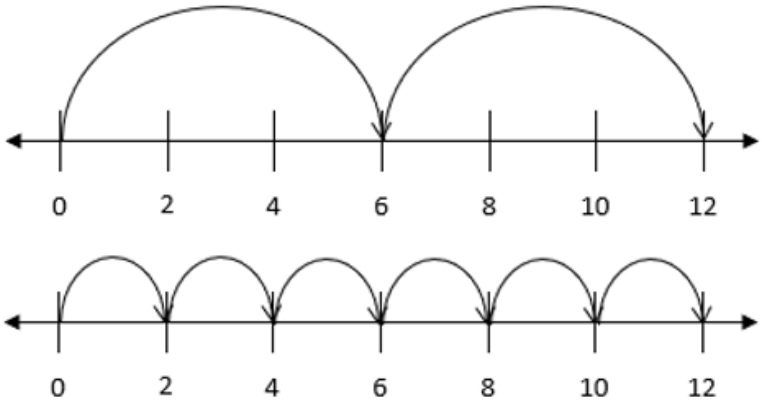
c. 4 x 8 = _____ x 4

= _____

d. 4 x _____ = _____ x 4

= 28

3. Use the number lines to write two different multiplication sentences.



_____ × _____ = _____

_____ × _____ = _____

4. Solve.

a. $4 \times 8 = a$

b. $3 \times b = 21$

c. $c \times 8 = 40$

d. $18 \div 6 = d$

e. $e \times 6 = 24$

f. $f \div 7 = 5$

g. $9 = 36 \div g$

h. $27 \div h = 9$

5. Use the tape diagrams to write two different multiplication sentences.

_____ × _____ = _____

_____ × _____ = _____

6. Match the expressions.

Sources

1. EngageNY Mathematics Grade 3 Mathematics > Module 3 > Topic A > Lesson 1 — Homework, Question #2 Grade 3 Mathematics > Module 3 > Topic A > Lesson 1 of the New York State Common Core Mathematics Curriculum from EngageNY and Great Minds. © 2015 Great Minds. Licensed by EngageNY of the New York State Education Department under the CC BY-NC-SA 3.0 US license. Accessed Dec. 2, 2016, 5:15 p.m.. Modified by Fishtank Learning, Inc.

5×6 7 threes

3 sevens 2×10

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2 eights 9×5

6. EngageNY Mathematics Grade 3 Mathematics > Module 3 > Topic A > Lesson 1 — Homework, Question #3 Grade 3 Mathematics > Module 3 > Topic A > Lesson 1 of the New York State Common Core Mathematics Curriculum from EngageNY and Great Minds. © 2015 Great Minds. Licensed by EngageNY of the New York State Education Department under the CC BY-NC-SA 3.0 US license. Accessed Dec. 2, 2016, 5:15 p.m..

5×9 8×2

10 twos 6×3