$$
\begin{aligned}
& \text { (9) }
\end{aligned}
$$

$\qquad$ Date: $\qquad$
3.OA. 1 I can understand multiplication by thinking about groups of objects
3.OA. 2 I can understand division by thinking about how one group can be divided into smaller groups.
3.OA. 3 I can use what I know about multiplication and division to solve word problems.

Write the multiplication sentence for each picture.
1.

2.

$\qquad$
3.

$$
\begin{aligned}
& * * * * * * * * \\
& * * * * * * * * \\
& * * * * * * * *
\end{aligned}
$$

6. 


7. Sarah and Michael have 15 pieces of candy. They want to share between themselves and a friend. How many candies does each person get?
8. Mrs. Thompson splits her class into four groups. If there are 6 students in each group, what is the total number of students in the class?
$\qquad$
$\qquad$
Date:
3.OA. 1 I can understand multiplication by thinking about groups of objects
3.OA. 2 I can understand division by thinking about how one group can be divided into smaller groups.
3.OA. 3 I can use what I know about multiplication and division to solve word problems.

Write the multiplication sentence for each picture.
1.


$$
4 \times 4=16
$$

2. 


$6 \times 3=18,3 \times 6=24$
3.

$$
\begin{aligned}
& * * * * * * * * \\
& * * * * * * * * \\
& * * * * * * * *
\end{aligned}
$$

$$
8 \times 3=24,3 \times 8=24
$$

Write the division sentence for each picture.

$12 \div 3=4,12 \div 4=3$
5.

$28 \div 7=4,28 \div 4=7$
6.

$18 \div 6=3,18 \div 3=6$
7. Sarah and Michael have 27 pieces of candy. They want to share between themselves and a friend. How many candies does each person get?

$$
9 \text { pieces of candy }(27 \div 3=9)
$$

8. Mrs. Thompson splits her class into four groups. If there are 6 students in each group, what is the total number of students in the class?
$\qquad$
3.OA. 5 I can use the Commutative property of multiplication. (I know that if $6 \times 4=24$, then $4 \times 6=24$.)
3.OA. 5 I can use the Associative property of multiplication. (To figure out $3 \times 5 \times 2 \mathrm{I}$ can multiply $3 \times 5=15$, then $15 \times 2=30$ OR multiply $5 \times 2=10$, then $3 \times 10=30$.)
3.0A. 5 I can use the Distributive property of multiplication. (To figure out $8 \times 7$, I can think of $8 \times(5+2)$ which means $(8 \times 5)+(8 \times 2)=40+16=56$.)

Use the Commutative Property to write an equivalent equation.

1. $4 \times 8=32$
2. $9 \times 6=54$
3. $5 \times 2=10$
4. $6 \times 7=42$
5. $8 \times 6=48$

Use the Associative Property to solve the equations.
6. $5 \times 2 \times 2$
7. $4 \times 3 \times 2$
8. $3 \times 3 \times 5$
9. $7 \times 2 \times 2$
10. $2 \times 3 \times 8$

Use the Distributive Property to solve the equations. Use the space below to write the two step process.
11. $9 \times 8=$
12. $12 \times 5=$
13. $13 \times 6=$
14. $16 \times 4=$
15. $11 \times 12=$
$\qquad$ Date: $\qquad$
3.OA. 5 I can use the Commutative property of multiplication. (I know that if $6 \times 4=24$, then $4 \times 6=24$.)
3.OA. 5 I can use the Associative property of multiplication. (To figure out $3 \times 5 \times 2 \mathrm{I}$ can multiply $3 \times 5=15$, then $15 \times 2=30$ OR multiply $5 \times 2=10$, then $3 \times 10=30$.)
3.0A. 5 I can use the Distributive property of multiplication. (To figure out $8 \times 7, \mathrm{I}$ can think of $8 \times(5+2)$ which means $(8 \times 5)+(8 \times 2)=40+16=56$.)

Use the Commutative Property to write an equivalent equation.

1. $4 \times 8=32$
2. $9 \times 6=54$
3. $5 \times 2=10$
4. $6 \times 7=42$
5. $8 \times 6=48$
$8 \times 4=32$
$6 \times 9=54$
$2 \times 5=10$
$7 \times 6=42$
$6 \times 8=48$

Use the Associative Property to solve the equations.
6. $5 \times 2 \times 2$
7. $4 \times 3 \times 2$
8. $3 \times 3 \times 5$
9. $7 \times 2 \times 2$
10. $2 \times 3 \times 8$
$(10) \times 2=20$
(12) $\times 2=24$
(6) $\times 5=30$
(14) $\times 2=28$
(6) $\times 8=48$

Use the Distributive Property to solve the equations. Use the space below to write the two-step process.
11. $9 \times 8=72$
12. $12 \times 5=\mathbf{6 0}$
13. $13 \times 6=78$
14. $16 \times 4=$
ex:
$(9 \times 4)+(9 \times 4)$
$36+36=72$
ex:
$(6 \times 5)+(6 \times 5)$
$30+30=60$
ex:
$(7 \times 6)+(6 \times 6)$
$42+36=78$
$(8 \times 4)+(8 \times 4)$
$32+32=64$

Date:

```
3.OA. 6 I can find the answer to a division problem by thinking of the missing factor in a multiplication problem. (I can figure out 32 , 8 because I know that \(8 \times 4=32\).)
3. OA. 7 I can multiply and divide within 100 easily and quickly because I know how multiplication and division are related.
```

Use the multiplication equations to find the missing factor in the division equations.

1. If $6 \times 4=24$, then $24 \div 4=$ $\qquad$
2. If $10 \times 3=30$, then $30 \div 3=$ $\qquad$
3. If $3 \times 3=9$, then $9 \div 3=$ $\qquad$
4. If $5 \times 8=40$, then $40 \div 8=$ $\qquad$
5. If $6 \times 9=54$, then $54 \div 6=$ $\qquad$
6. If $5 \times 7=35$, then $35 \div 5=$ $\qquad$

Solve the multiplication and division problems.
7. $7 \times 2=$ $\qquad$ 8. $4 \times 5=$ $\qquad$ 9. $8 \times 7=$ $\qquad$ 10. $3 \times 9=$ $\qquad$
11. $5 \times 9=$ $\qquad$ 12. $2 \times 8=$ $\qquad$ 13. $10 \times 4=$ $\qquad$ 14. $6 \times 6=$ $\qquad$
17. $6 \times 3=$ $\qquad$ 18. $8 \times 9=$ $\qquad$
21. $9 \times 9=$ $\qquad$ 22. $7 \times 7=$ $\qquad$
26. $28 \div 4=$ $\qquad$
25. $18 \div 6=$ $\qquad$
30. $45 \div 9=$ $\qquad$
34. $72 \div 8=$ $\qquad$

```
3.OA. 6 I can find the answer to a division problem by thinking of the missing factor in a multiplication problem. (I can figure out 32,8 because I know that
\(8 \times 4=32\).)
3.OA. 7 I can multiply and divide within 100 easily and quickly because I know how multiplication and division are related.
```

Use the multiplication equations to find the missing factor in the division equations.

1. If $6 \times 4=24$, then $24 \div 4=6$
2. If $5 \times 8=40$, then $40 \div 8=5$
3. If $10 \times 3=30$, then $30 \div 3=10$
4. If $6 \times 9=54$, then $54 \div 6=9$
5. If $3 \times 3=9$, then $9 \div 3=3$
6. If $5 \times 7=35$, then $35 \div 5=7$

Solve the multiplication and division problems.

| 7. | $7 \times 2=14$ | 8. | $4 \times 5=20$ | 9. | $8 \times 7=56$ | 10. | $3 \times 9=27$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11. | $5 \times 9=45$ | 12. | $2 \times 8=16$ | 13. | $10 \times 4=40$ | 14. | $6 \times 6=36$ |
| 15. | $3 \times 3=9$ | 16. | $4 \times 7=28$ | 17. | $6 \times 3=18$ | 18. | $8 \times 9=72$ |
| 19. | $10 \times 10=100$ | 20. | $5 \times 5=\mathbf{2 5}$ | 21. | $9 \times 9=81$ | 22. | $7 \times 7=49$ |
| 23. | $24 \div 4=6$ | 24. | $40 \div 10=4$ | 25. | $18 \div 6=3$ | 26. | $28 \div 4=7$ |
| 27. | $20 \div 5=4$ | 28. | $56 \div 8=7$ | 29. | $49 \div 7=7$ | 30. | $45 \div 9=5$ |
| 31. | $16 \div 4=4$ | 32. | $15 \div 3=5$ | 33. | $12 \div 2=6$ | 34. | $72 \div 8=9$ |

7. $7 \times 2=14$
8. $4 \times 5=20$
9. $2 \times 8=16$
10. $4 \times 7=\mathbf{2 8}$
11. $5 \times 5=\mathbf{2 5}$
12. $40 \div 10=4$
13. $15 \div 3=5$
14. $8 \times 7=56$
15. $6 \times 6=36$
16. $8 \times 9=72$
17. $7 \times 7=49$
18. $28 \div 4=7$
19. $45 \div 9=\mathbf{5}$
20. $72 \div 8=9$

Name: $\qquad$ Date: $\qquad$
3.OA. 8 I can use addition, subtraction, multiplication and division to solve all kinds of word problems and then use mental math to decide if my answers are reasonable.
3.OA. 9 I can find patterns in addition and multiplication tables and explain them using what I know about how numbers work. .

Solve the addition, subtraction, multiplication, and division word problems.

1. Danny, Zach, and Joey collect baseball cards. They each have 10 cards. How many cards do they have all together?
2. Mr. Jones has 81 pencils. If he divides them amongst 9 of his students, how many pencils does each student get?
3. Kelly invited 29 friends to her birthday party. 16 friends could not come. How many friends were able to come to the party?
4. John had a sleepover with his friends. Each friend brought a treat to share. John brought 15 cupcakes. Mikey brought 3 bags of popcorn. David brought 10 bags of candy. How many items did the boys bring to the sleepover?
$\qquad$
$\qquad$
5. Maggie bought four dozen eggs to bake cakes for the bake sale. How many eggs did Maggie buy all together? $\qquad$

Find the pattern and fill in the missing numbers.
6.

| 4 | 7 |  | 13 |  | 19 |
| :--- | :--- | :--- | :--- | :--- | :--- |

7. 

|  | 18 | 24 | 30 |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |

Pattern: $\qquad$

Pattern: $\qquad$
$\qquad$ Date:
ANSWER KEY
3.OA. 8 I can use addition, subtraction, multiplication and division to solve all kinds of word problems and then use mental math to decide if my answers are reasonable.
3.OA. 9 I can find patterns in addition and multiplication tables and explain them using what I know about how numbers work. .

Solve the addition, subtraction, multiplication, and division word problems.

1. Danny, Zach, and Joey collect baseball cards. They each have 10 cards. How many cards do they have all together?

## 30 baseball cards

2. Mr. Jones has 81 pencils. If he divides them amongst 9 of his students, how many pencils does each student get?
3. Kelly invited 29 friends to her birthday party. 16 friends could not come. How many friends were able to attend the party?

13 friends could attend
4. John had a sleepover with his friends. Each friend brought a treat to share. John brought 15 cupcakes. Mikey brought three bags of popcorn. David brought ten bags of candy. How many items did the boys bring to the sleepover?

28 items
5. Maggie bought four dozen eggs to bake cakes for the bake sale. How many eggs did Maggie buy all together?

48 eggs

Find the pattern and fill in the missing numbers.
6.

| 4 | 7 | 10 | 13 | 16 | 19 |
| :--- | :--- | :--- | :--- | :--- | :--- |

7. 

| 12 | 18 | 24 | 30 | 36 | 42 |
| :--- | :--- | :--- | :--- | :--- | :--- |



