

6
LEVEL

apologia

EXPLORING CREATION WITH
MATHEMATICS
SKILLS PRACTICE



Kathryn Gomes

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UNIT

1

SKILLS PRACTICE

SKILL ONE: MULTIPLES AND FACTORS

SKILL TWO: LONG DIVISION

SKILL THREE: PRIME NUMBERS AND PRIME FACTORIZATION





SKILL ONE

MULTIPLES AND FACTORS

The Most Multiples Game Board

Follow the instructions on the back of this page to play The Most Multiples game.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Winner: _____

The Most Multiples Game

You Will Need:

- 2 players
- 2 different colored pencils
- Numbered cards 2–10 (such as Uno® cards or playing cards)

You Will Do:

1. Shuffle the cards. Player One draws a card and colors in all the multiples of that number on the chart. It is OK for players to skip count if they do not remember all the multiples.
2. Player Two draws a card and colors in all the multiples of that number on the chart. If a multiple is already colored in, it is skipped.
3. Play continues until all the numbered cards have been played. The player with the most squares colored in wins.





SKILL ONE MULTIPLES AND FACTORS

Factor Table Worksheet #1

Complete each factor table by listing the factor pairs for each number.

a.

24

b.

30

c.

11

d.

40

e.

45

f.

18



SKILL ONE
MULTIPLES AND FACTORS
Factor Table Worksheet #2

Complete each factor table by listing the factor pairs for each number.

a.

20	

b.

27	

c.

99	

d.

70	

e.

19	

f.

21	



SKILL ONE MULTIPLES AND FACTORS

Factor Table Worksheet #3

Complete each factor table by listing the factor pairs for each number.

a.

35

b.

48

c.

22

d.

36

e.

16

f.

28



SKILL ONE
MULTIPLES AND FACTORS
Multiples Worksheet #1

Answer the questions below.

1. List the next 7 multiples for each number.

a. 3, _____, _____, _____, _____, _____, _____, _____

b. 8, _____, _____, _____, _____, _____, _____, _____

c. 6, _____, _____, _____, _____, _____, _____, _____

d. 2, _____, _____, _____, _____, _____, _____, _____

e. 7, _____, _____, _____, _____, _____, _____, _____

2. Is 37 a multiple of 3? Yes or no?

3. Is 48 a multiple of 6? Yes or no?

4. List a common multiple of 6 and 7. _____

5. Look back at the multiples of 8 above. Circle any multiples of 8 that are also multiples of 3.

6. Give an example of a number that is a common multiple of 2 and 7. There is more than one correct answer.



SKILL ONE
MULTIPLES AND FACTORS
Multiples Worksheet #2

Answer the questions below.

1. List the next 7 multiples for each number.

a. 5, _____, _____, _____, _____, _____, _____, _____

b. 4, _____, _____, _____, _____, _____, _____, _____

c. 9, _____, _____, _____, _____, _____, _____, _____

d. 6, _____, _____, _____, _____, _____, _____, _____

e. 10, _____, _____, _____, _____, _____, _____, _____

2. Is 41 a multiple of 5? Yes or no?

3. Is 72 a multiple of 9? Yes or no?

4. List a common multiple of 6 and 9. _____

5. Look back at the multiples of 10 above. Circle any multiples of 10 that are also multiples of 4.

6. Give an example of a number that is a common multiple of 5 and 6. There is more than one correct answer.



SKILL ONE MULTIPLES AND FACTORS

Least Common Multiple Code Breaker #1

Find the least common multiple (LCM) of each pair of numbers.
Then match the answer with the letter in the code chart below.
Write the letters in order in the spaces below.

1. LCM of 6 and 8 = _____
2. LCM of 4 and 5 = _____
3. LCM of 3 and 7 = _____
4. LCM of 9 and 12 = _____
5. LCM of 10 and 4 = _____
6. LCM of 5 and 6 = _____
7. LCM of 8 and 9 = _____
8. LCM of 7 and 9 = _____
9. LCM of 4 and 6 = _____

HOW DO YOU PUT A BABY PLANET TO SLEEP?

1 2 3 4 5 6 7 8 9

A	B	C	D	E	F	G	H	I	J	K	L	M
10	48	30	35	63	45	26	17	6	18	72	22	23

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
9	20	8	19	36	14	12	21	41	42	40	24	25



SKILL ONE MULTIPLES AND FACTORS

Least Common Multiple Code Breaker #2

Find the least common multiple (LCM) of each pair of numbers.
Then match the answer with the letter in the code chart below.
Write the letters in order in the spaces below.

1. LCM of 15 and 4 = _____

2. LCM of 3 and 5 = _____

3. LCM of 10 and 7 = _____

4. LCM of 9 and 3 = _____

5. LCM of 2 and 4 = _____

6. LCM of 5 and 6 = _____

7. LCM of 5 and 9 = _____

8. LCM of 3 and 4 = _____

9. LCM of 4 and 6 = _____

WHAT DID THE TRIANGLE SAY TO THE CIRCLE?

You're _____

1 2 3 4 5 6 7 8 9

A	B	C	D	E	F	G	H	I	J	K	L	M
10	41	35	37	45	6	26	17	70	18	72	30	23

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
9	15	60	19	36	12	4	21	41	42	40	24	25



SKILL ONE MULTIPLES AND FACTORS

Least Common Multiple Code Breaker #3

Find the least common multiple (LCM) of each pair of numbers.
Then match the answer with the letter in the code chart below.
Write the letters in order in the spaces below.

1. LCM of 3 and 5 = _____
2. LCM of 2 and 3 = _____
3. LCM of 10 and 15 = _____
4. LCM of 6 and 8 = _____
5. LCM of 9 and 12 = _____
6. LCM of 3 and 8 = _____
7. LCM of 7 and 9 = _____
8. LCM of 8 and 11 = _____
9. LCM of 5 and 7 = _____
10. LCM of 3 and 4 = _____

WHAT HAS TEN LETTERS AND STARTS WITH GAS?

An _____ _____ _____ _____ _____ _____ _____ _____ _____
 1 2 3 4 5 6 7 8 9 10

A	B	C	D	E	F	G	H	I	J	K	L	M
15	63	31	32	12	45	26	17	88	18	55	35	36
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
9	24	8	19	36	14	30	6	41	42	40	24	25



SKILL ONE
MULTIPLES AND FACTORS
Multiples and Factors Mixed Practice

Follow the directions to complete the questions.

1. List all the factors for each number.

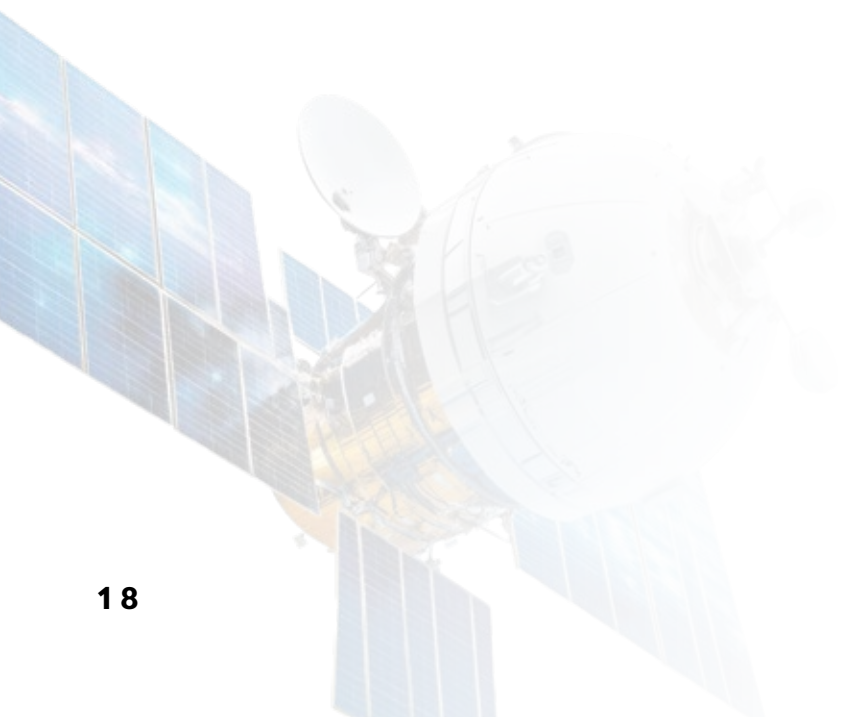
- a. 16
- b. 21
- c. 30
- d. 32
- e. 25
- f. 44

2. List the first five multiples of the given numbers.

- a. 6, _____, _____, _____, _____, _____
- b. 7, _____, _____, _____, _____, _____
- c. 4, _____, _____, _____, _____, _____
- d. 9, _____, _____, _____, _____, _____
- e. 5, _____, _____, _____, _____, _____

3. Circle the numbers below that are factors of 18.

1 2 3 4 5 6 7 8 9 10





SKILL ONE
MULTIPLES AND FACTORS
Fabulous Factors Game Board

Follow the instructions on the back of this page to play the Fabulous Factors game.

Round 1

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35
36	37	38	39	40
41	42	43	44	45
46	47	48	49	50

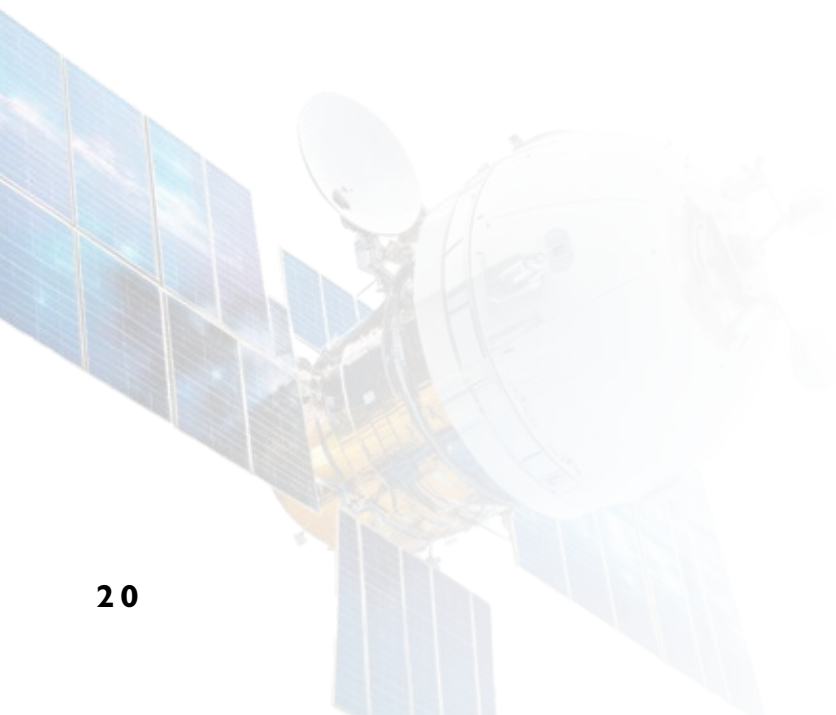
Fabulous Factors Game

You Will Need:

- 2 players
- 2 colored pencils
- Numbered cards (such as Uno® cards or playing cards)

You Will Do:

1. Shuffle the numbered cards. Player One draws two cards and uses them to create a two-digit number that is less than or equal to 50. If a small enough number cannot be created, the cards are discarded and the player draws again. If there are two options under 50, the player gets to decide which number to make.
2. Player One circles the matching two-digit number on the board with his or her colored pencil and then circles all of that number's factors as well. For example, if a 4 and a 9 were drawn, the player would circle 49, 7, and 1.
3. Player Two draws two cards and makes a two-digit number that is less than or equal to 50. He or she circles that number on the board and any of its factors that are not already circled.
4. Players can agree on a certain number of turns or play until all numbers are circled. The player with the most numbers circled wins.





SKILL TWO LONG DIVISION

Sticky Note or Notecard Practice

Sticky note or notecard problems are one of my favorite ways to practice when the skill itself is pretty taxing. Long division is one of those areas because there are so many steps to one problem. Write out just one of the problems below on a notecard or sticky note for your child. Have your child complete that one problem before starting the lesson for the day. Many kids will focus and put forth their best effort when they see that it is just one problem.

a. $9 \overline{)864}$

b. $5 \overline{)495}$

c. $4 \overline{)340}$

d. $6 \overline{)357}$

e. $9 \overline{)172}$

f. $6 \overline{)115}$

g. $15 \overline{)213}$

h. $12 \overline{)128}$

i. $51 \overline{)556}$

j. $16 \overline{)181}$

k. $11 \overline{)235}$

l. $13 \overline{)278}$

**SKILL TWO**
LONG DIVISION**Long Division Worksheet #1 (No Remainders)**

Use long division to find each quotient.

a. $5 \overline{)1035}$

b. $7 \overline{)1561}$

c. $6 \overline{)750}$

d. $4 \overline{)328}$

e. $7 \overline{)882}$

f. $8 \overline{)768}$

g. $5 \overline{)1225}$

h. $3 \overline{)2883}$



SKILL TWO LONG DIVISION

Long Division Worksheet #2 (No Remainders)

Use long division to find each quotient.

a. $4 \overline{)1024}$

b. $7 \overline{)1092}$

c. $8 \overline{)256}$

d. $5 \overline{)235}$

e. $5 \overline{)1060}$

f. $6 \overline{)336}$

g. $4 \overline{)764}$

h. $3 \overline{)177}$

**SKILL TWO**
LONG DIVISION**Long Division Worksheet #1 (With Remainders)**

Use long division to find each quotient.

a. $7 \overline{)1037}$

b. $8 \overline{)59}$

c. $3 \overline{)1025}$

d. $4 \overline{)259}$

e. $5 \overline{)257}$

f. $6 \overline{)733}$

g. $7 \overline{)561}$

h. $9 \overline{)1097}$



SKILL TWO LONG DIVISION

Long Division Worksheet #2 (With Remainders)

Use long division to find each quotient.

a. $4 \overline{)1037}$

b. $5 \overline{)511}$

c. $8 \overline{)301}$

d. $9 \overline{)992}$

e. $6 \overline{)183}$

f. $4 \overline{)301}$

g. $9 \overline{)88}$

h. $3 \overline{)256}$



SKILL TWO LONG DIVISION

Find the Missing Digit Puzzles #1

Use your knowledge of long division to fill in the gray boxes with the missing digits for each problem.

a.

	1	0
5	5	
–	5	
	0	3
–		0
		3

b.

		5
3	7	7
–	6	
	1	
–	1	5

c.

			1	2
1	2	1		7
	–	1	2	
			2	7
		–	2	
				3

d.

			3	0
1	5	4	5	
	–		5	
			0	5
		–		0



SKILL TWO LONG DIVISION

Find the Missing Digit Puzzles #2

Use your knowledge of long division to fill in the gray boxes with the missing digits for each problem.

a.

		4	2
3	1		7
-	1	2	
		0	7
-			
			1

b.

			4
6	1	4	5
-	1	2	
			5
	-	2	4
			1

c.

			1		1
1	0	1	0	1	1
	−	1	0		
				1	
			−	0	
				1	1
			−	1	0
					1

d.

			4	1
1	3	5	4	2
	-		2	
			2	2
		-	1	



SKILL TWO LONG DIVISION

Find the Missing Digit Puzzles #3

Use your knowledge of long division to fill in the gray boxes with the missing digits for each problem.

a.

	2	0	
4	8	2	4
—			
	0	2	
—		0	
		2	
	—	2	4
			0

b.

		5	2
3	4	5	6
—	3		
	1	5	
—	1		
		0	6
	—		6
			0

c.

			1	3
5	0	6		0
	—	5	0	
		1	8	
	—	1	5	0
			3	0

d.

			2	
2	2	5	9	4
	—	4	4	
		1	5	
	—	1	5	4
				0



SKILL TWO LONG DIVISION

Find the Missing Digit Puzzles #4

Use your knowledge of long division to fill in the gray boxes with the missing digits for each problem.

a.

	1		7
3	5	6	1
–	3		
	2		
–	2	4	
		2	1
	–	2	1
			0

b.

	1	3
6	7	
–	6	
		9
–	1	8
		1

c.

			1	5
3	2		8	0
	–	3	2	
		1	6	
	–	1	6	0
				0

d.

				3
2	1	5	0	1
	–	4	2	
				1
		–	6	3
			1	8

**SKILL THREE****PRIME NUMBERS AND PRIME FACTORIZATION****Circle the Prime Numbers Under 100 Worksheet #1**

To the best of your ability, circle all the prime numbers under 100 on the chart below. You may want to begin by crossing out numbers you know aren't prime, such as multiples of 2, 3, and 5.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

**SKILL THREE****PRIME NUMBERS AND PRIME FACTORIZATION****Circle the Prime Numbers Under 100 Worksheet #2**

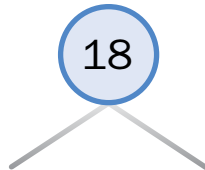
To the best of your ability, circle all the prime numbers under 100 on the chart below. You may want to begin by crossing out numbers you know aren't prime, such as multiples of 2, 3, and 5.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

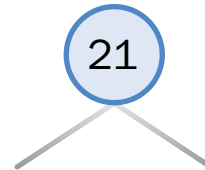
**SKILL THREE****PRIME NUMBERS AND PRIME FACTORIZATION****Prime Factorization Worksheet #1**

Use the tree diagrams to find the prime factorization of each number.

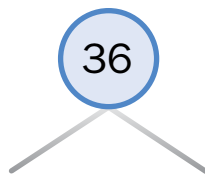
a.



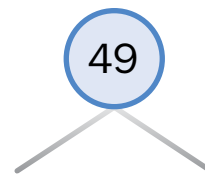
b.



c.



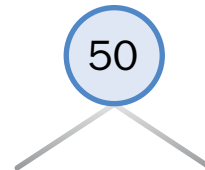
d.



e.



f.





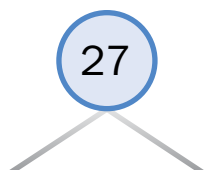
SKILL THREE

PRIME NUMBERS AND PRIME FACTORIZATION

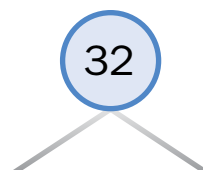
Prime Factorization Worksheet #2

Use the tree diagrams to find the prime factorization of each number.

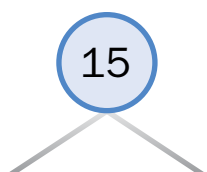
a.



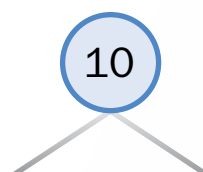
b.



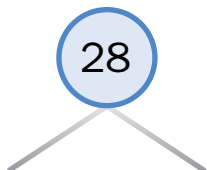
c.



d.



e.



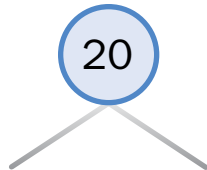
f.



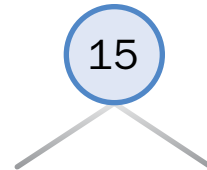
**SKILL THREE****PRIME NUMBERS AND PRIME FACTORIZATION****Prime Factorization Worksheet #3**

Use the tree diagrams to find the prime factorization of each number.

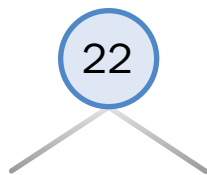
a.



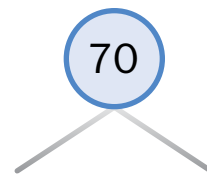
b.



c.



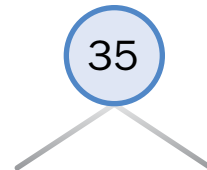
d.



e.



f.





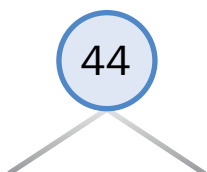
SKILL THREE

PRIME NUMBERS AND PRIME FACTORIZATION

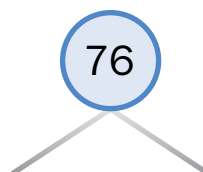
Prime Factorization Worksheet #4

Use the tree diagrams to find the prime factorization of each number.

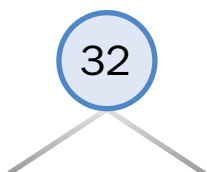
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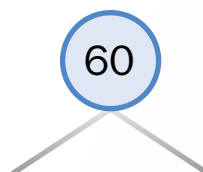
b.



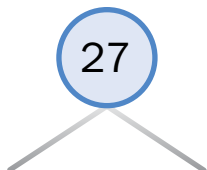
c.



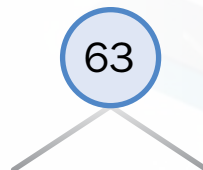
d.

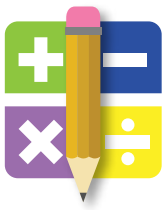


e.



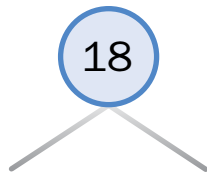
f.



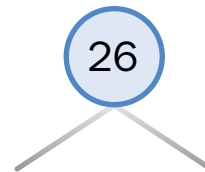
**SKILL THREE****PRIME NUMBERS AND PRIME FACTORIZATION****Prime Factorization Worksheet #5**

Use the tree diagrams to find the prime factorization of each number.

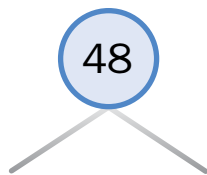
a.



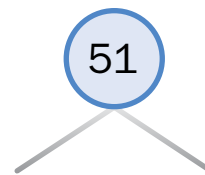
b.



c.



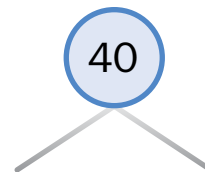
d.



e.



f.





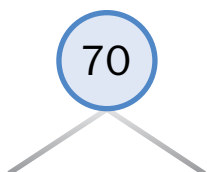
SKILL THREE

PRIME NUMBERS AND PRIME FACTORIZATION

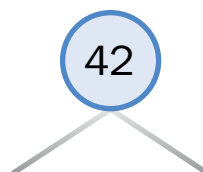
Prime Factorization Worksheet #6

Use the tree diagrams to find the prime factorization of each number.

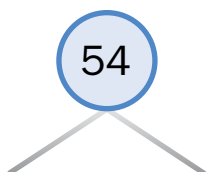
a.



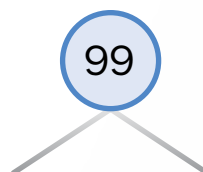
b.



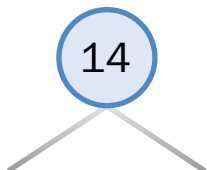
c.



d.



e.



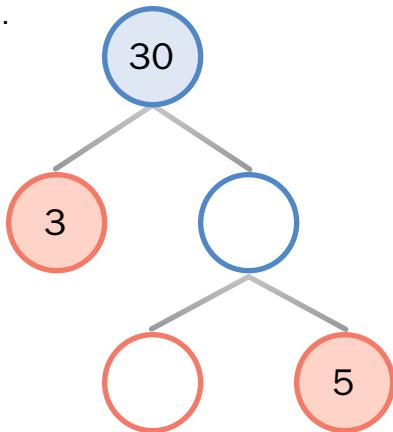
f.



**SKILL THREE****PRIME NUMBERS AND PRIME FACTORIZATION****Tree Diagram Worksheet #1**

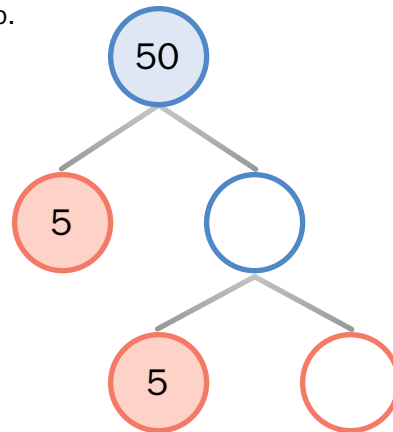
Fill in the missing numbers on each tree diagram. Then write out the prime factorization.

a.



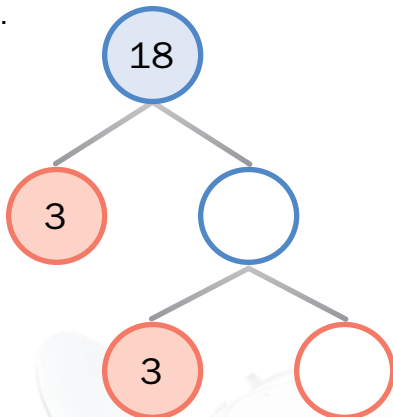
$$30 = \underline{\quad} \times \underline{\quad} \times \underline{\quad}$$

b.



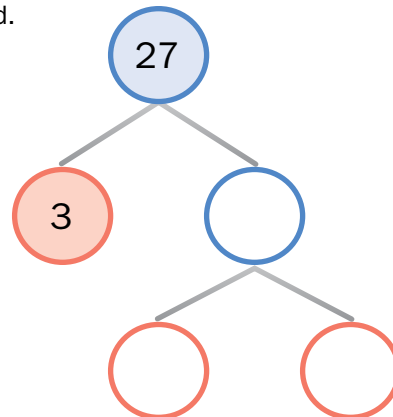
$$50 = \underline{\quad} \times \underline{\quad} \times \underline{\quad}$$

c.



$$18 = \underline{\quad} \times \underline{\quad} \times \underline{\quad}$$

d.



$$27 = \underline{\quad} \times \underline{\quad} \times \underline{\quad}$$



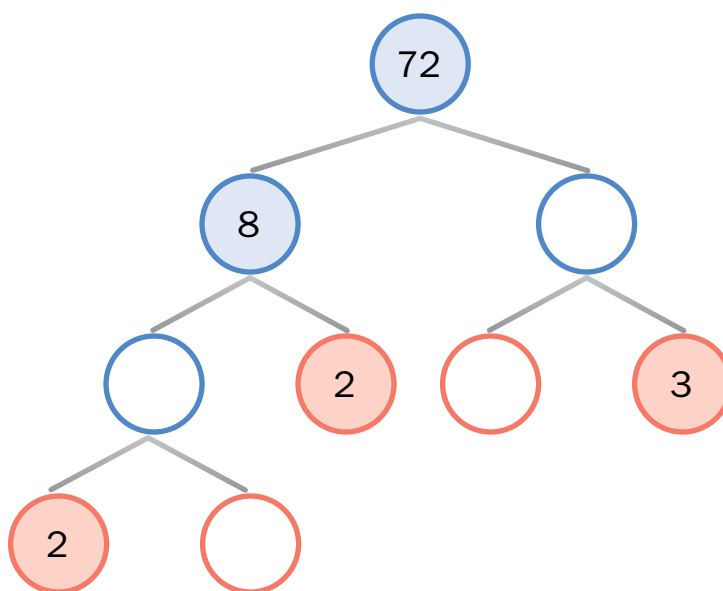
SKILL THREE

PRIME NUMBERS AND PRIME FACTORIZATION

Tree Diagram Worksheet #2

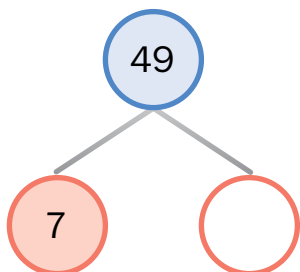
Fill in the missing numbers on each tree diagram. Then write out the prime factorization.

a.



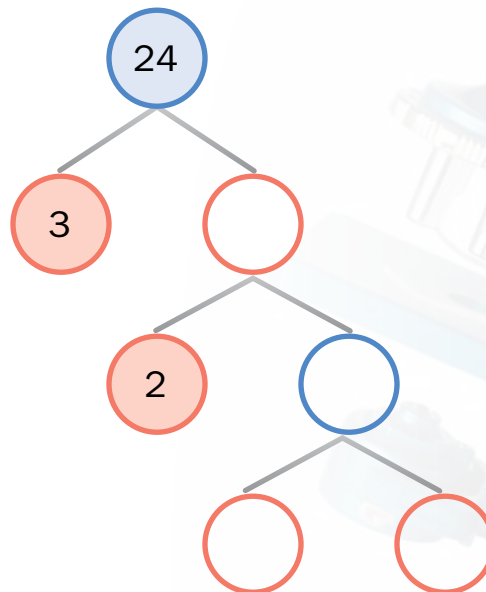
$$72 = \underline{\quad} \times \underline{\quad} \times \underline{\quad} \times \underline{\quad} \times \underline{\quad}$$

b.



$$49 = \underline{\quad} \times \underline{\quad}$$

c.



$$24 = \underline{\quad} \times \underline{\quad} \times \underline{\quad} \times \underline{\quad}$$

SKILLS PRACTICE SUPPLY LIST

- Scissors
- 2 different colored pencils
- Numbered cards 2–10 (such as Uno® cards or playing cards)
- Paper clip
- Pencil
- Dominoes
- 3 dice
- 2 or 3 favorite recipes with mixed numbers in the ingredient list
- Deck of cards
- Whiteboard
- Game pieces