RADIANT HEIGHTS ACADEMY

From Radiant Minds to Great Heights

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Student Name: _____

MATHEMATICS BOOKLET

Level 3-4 Term 2 Week 7

THIS WEEK'S FOCUS

- ✔ Simplifying Fractions
- ✔ Making Equivalent Fractions
- ✔ Improper vs Mixed Fractions Revision

FRACTIONS MADE EASY!

SIMPLIFYING FRACTIONS, HCF, LCM & EQUIVALENT FRACTIONS

WHAT IS A FRACTION?

A fraction shows parts of a whole.

$\frac{3}{4}$ → Numerator (top number)

$\frac{3}{4}$ → Denominator (bottom number)

This means 3 parts out of 4 equal parts.

WHY SIMPLIFY FRACTIONS?

- Makes fractions easier to read.
- Easier to compare.
- Easier to calculate.
- Easier to understand.

$\frac{2}{4} = \frac{1}{2}$

Same amount, but simpler!

SIMPLIFYING FRACTIONS

Divide the numerator and denominator by the same number until you cannot anymore.

Example:

$\frac{6}{8} \xrightarrow{\div 2} \frac{3}{4}$

$6 \div 2 = 3$ and $8 \div 2 = 4$

EASY TIP!

If both numbers are EVEN, divide by 2 first!

Keep dividing by 2 until you cannot.

Example:

$\frac{8}{12} \xrightarrow{\div 2} \frac{4}{6} \xrightarrow{\div 2} \frac{2}{3}$

Answer: $\frac{2}{3}$

HIGHEST COMMON FACTOR (HCF)

The biggest number that divides into BOTH numbers.

Example: Find the HCF of 12 and 18.

Factors of 12:	Factors of 18:
1, 2, 3, 4, (6), 12	1, 2, 3, (6), 9, 18

HCF = 6

Using HCF to Simplify

$\frac{12}{18} \xrightarrow{\div 6} \frac{2}{3}$

$12 \div 6 = 2$ and $18 \div 6 = 3$

LOWEST COMMON MULTIPLE (LCM)

The smallest number that both numbers can make.

Example: Find the LCM of 3 and 4.

Multiples of 3:	Multiples of 4:
1, 6, 9, (12), 15, ...	4, 8, (12), 16, ...

LCM = 12

Tips:

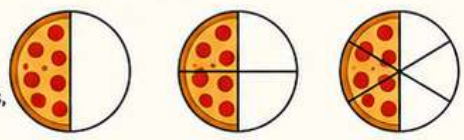
- Skip count to find multiples.
- LCM is the first number they both share.

EQUIVALENT FRACTIONS

Equivalent fractions are equal fractions that look different. They show the SAME amount!

PIZZA EXAMPLE

Same pizza, different cuts, same amount eaten!



$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$

HOW TO CREATE EQUIVALENT FRACTIONS

Multiply the numerator and denominator by the SAME number.

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

$2 \times 3 = 6$

$1 \times 3 = 3$

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

$\frac{1}{2} = \frac{?}{18}$

$2 \times 9 = 18$

$1 \times 9 = 9$

$\frac{1}{2} = \frac{9}{18}$

IMPORTANT RULE

Whatever you do to the denominator, you **MUST** do to the numerator too!

To simplify: **DIVIDE** both. ÷

To make equivalent fractions: **MULTIPLY** both. ×

Reducing Fractions Name:

Reduce each fraction as much as possible.

Ex) $\frac{50}{60} = \frac{5}{6}$

1) $\frac{35}{42} = \frac{\quad}{\quad}$

2) $\frac{49}{56} = \frac{\quad}{\quad}$

3) $\frac{18}{24} = \frac{\quad}{\quad}$

4) $\frac{2}{8} = \frac{\quad}{\quad}$

5) $\frac{12}{18} = \frac{\quad}{\quad}$

6) $\frac{10}{16} = \frac{\quad}{\quad}$

7) $\frac{3}{12} = \frac{\quad}{\quad}$

8) $\frac{7}{21} = \frac{\quad}{\quad}$

9) $\frac{10}{15} = \frac{\quad}{\quad}$

10) $\frac{9}{54} = \frac{\quad}{\quad}$

11) $\frac{16}{24} = \frac{\quad}{\quad}$

12) $\frac{10}{60} = \frac{\quad}{\quad}$

13) $\frac{9}{24} = \frac{\quad}{\quad}$

14) $\frac{35}{56} = \frac{\quad}{\quad}$

15) $\frac{6}{18} = \frac{\quad}{\quad}$

16) $\frac{9}{12} = \frac{\quad}{\quad}$

17) $\frac{30}{80} = \frac{\quad}{\quad}$

18) $\frac{4}{16} = \frac{\quad}{\quad}$

19) $\frac{45}{72} = \frac{\quad}{\quad}$

20) $\frac{4}{6} = \frac{\quad}{\quad}$

Answers

Ex. $\frac{5}{6}$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

Reducing Fractions

Name:

Reduce each fraction as much as possible.

Ex) $\frac{18}{24} = \frac{3}{4}$

1) $\frac{6}{48} = \_$

2) $\frac{70}{80} = \_$

3) $\frac{10}{16} = \_$

4) $\frac{4}{6} = \_$

5) $\frac{8}{32} = \_$

6) $\frac{25}{30} = \_$

7) $\frac{7}{42} = \_$

8) $\frac{10}{30} = \_$

9) $\frac{12}{18} = \_$

10) $\frac{21}{28} = \_$

11) $\frac{6}{18} = \_$

12) $\frac{28}{32} = \_$

13) $\frac{4}{12} = \_$

14) $\frac{12}{16} = \_$

15) $\frac{35}{40} = \_$

16) $\frac{2}{4} = \_$

17) $\frac{14}{21} = \_$

18) $\frac{2}{6} = \_$

19) $\frac{4}{16} = \_$

20) $\frac{10}{12} = \_$

Answers

Ex. $\frac{3}{4}$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
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1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

Reducing Fractions Name:

Reduce each fraction as much as possible.

Ex) $\frac{35}{56} = \frac{5}{8}$

1) $\frac{6}{36} = \_$

2) $\frac{16}{24} = \_$

3) $\frac{2}{6} = \_$

4) $\frac{56}{64} = \_$

5) $\frac{2}{12} = \_$

6) $\frac{10}{40} = \_$

7) $\frac{8}{24} = \_$

8) $\frac{27}{72} = \_$

9) $\frac{9}{54} = \_$

10) $\frac{27}{36} = \_$

11) $\frac{20}{32} = \_$

12) $\frac{7}{14} = \_$

13) $\frac{3}{24} = \_$

14) $\frac{2}{16} = \_$

15) $\frac{18}{48} = \_$

16) $\frac{30}{48} = \_$

17) $\frac{9}{12} = \_$

18) $\frac{9}{36} = \_$

19) $\frac{12}{18} = \_$

20) $\frac{15}{18} = \_$

Answers

Ex. $\frac{5}{8}$

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Reducing Fractions

Name:

Reduce each fraction as much as possible.

Ex) $\frac{7}{56} = \frac{1}{8}$

1) $\frac{30}{80} = \_$

2) $\frac{12}{32} = \_$

3) $\frac{14}{21} = \_$

4) $\frac{49}{56} = \_$

5) $\frac{6}{9} = \_$

6) $\frac{9}{36} = \_$

7) $\frac{10}{30} = \_$

8) $\frac{8}{24} = \_$

9) $\frac{4}{8} = \_$

10) $\frac{4}{12} = \_$

11) $\frac{27}{36} = \_$

12) $\frac{4}{6} = \_$

13) $\frac{30}{40} = \_$

14) $\frac{27}{72} = \_$

15) $\frac{3}{9} = \_$

16) $\frac{15}{40} = \_$

17) $\frac{12}{18} = \_$

18) $\frac{21}{56} = \_$

19) $\frac{9}{18} = \_$

20) $\frac{10}{16} = \_$

Answers

Ex. $\frac{1}{8}$

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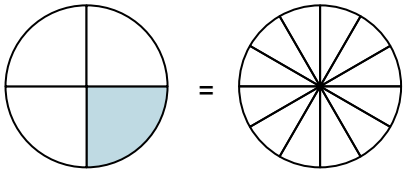
1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

Finding Equivalent Fractions

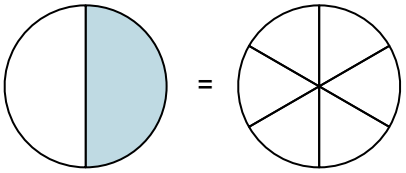
Name:

Shade in the visual fraction to find the equivalent fraction.

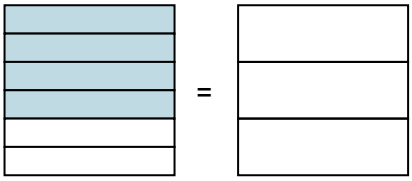
Ex) $\frac{1}{4} = \frac{3}{12}$



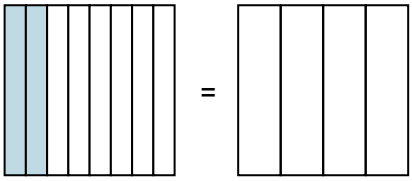
1) $\frac{1}{2} =$



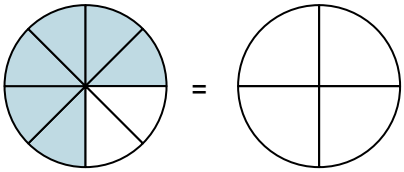
2) $\frac{4}{6} =$



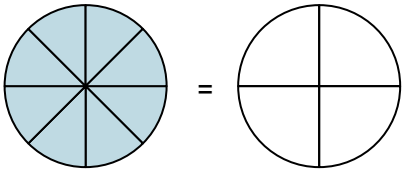
3) $\frac{2}{8} =$



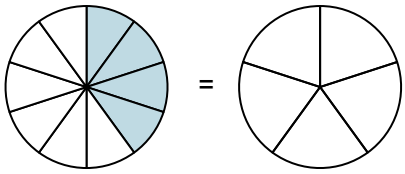
4) $\frac{6}{8} =$



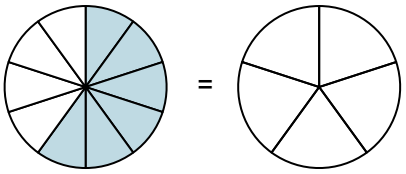
5) $\frac{8}{8} =$



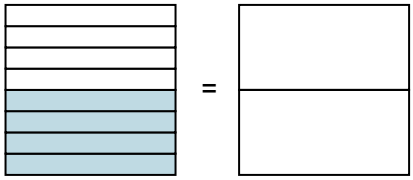
6) $\frac{4}{10} =$



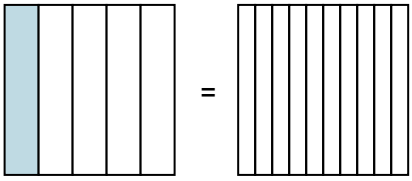
7) $\frac{6}{10} =$



8) $\frac{4}{8} =$



9) $\frac{1}{5} =$



Answers

Ex. $\frac{3}{12}$

1. _____
2. _____
3. _____
4. _____
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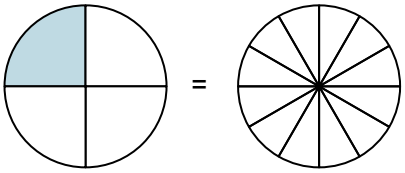
1-9	89	78	67	56	44	33	22	11	0

Finding Equivalent Fractions

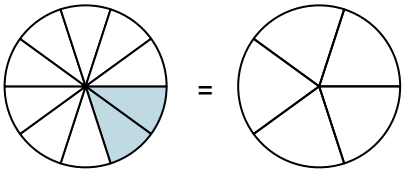
Name:

Shade in the visual fraction to find the equivalent fraction.

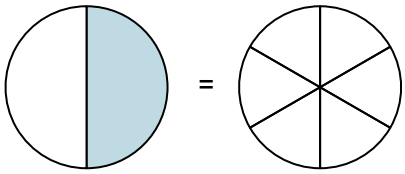
Ex) $\frac{1}{4} = \frac{3}{12}$



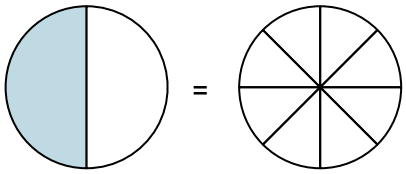
1) $\frac{2}{10} =$



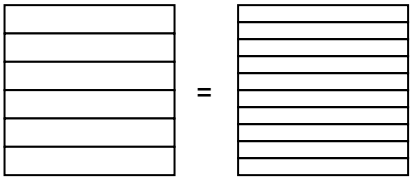
2) $\frac{1}{2} =$



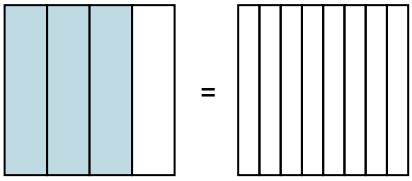
3) $\frac{1}{2} =$



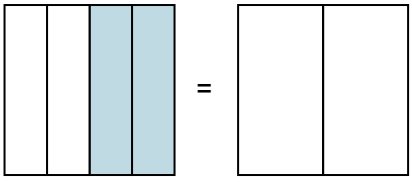
4) $\frac{0}{6} =$



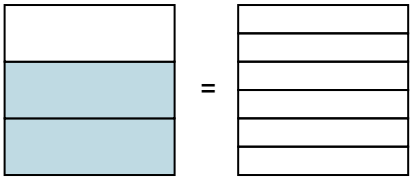
5) $\frac{3}{4} =$



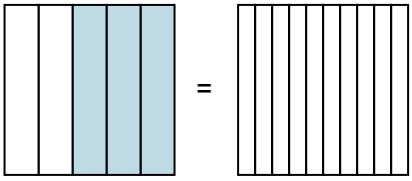
6) $\frac{2}{4} =$



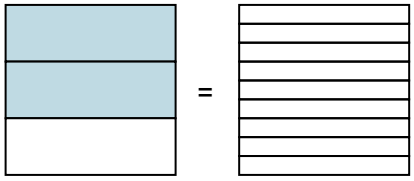
7) $\frac{2}{3} =$



8) $\frac{3}{5} =$



9) $\frac{2}{3} =$



Answers

Ex. $\frac{3}{12}$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
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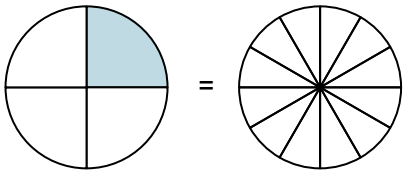
1-9	89	78	67	56	44	33	22	11	0

Finding Equivalent Fractions

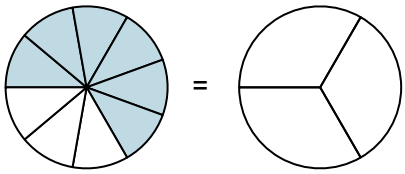
Name:

Shade in the visual fraction to find the equivalent fraction.

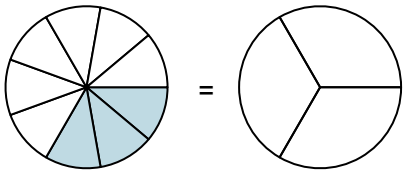
Ex) $\frac{1}{4} = \frac{3}{12}$



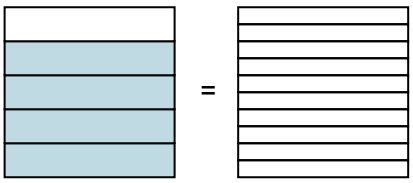
1) $\frac{6}{9} =$



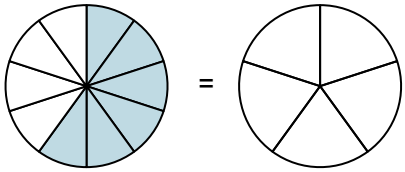
2) $\frac{3}{9} =$



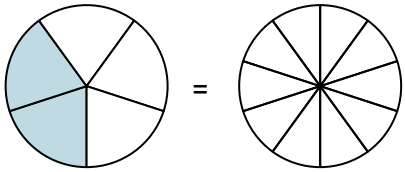
3) $\frac{4}{5} =$



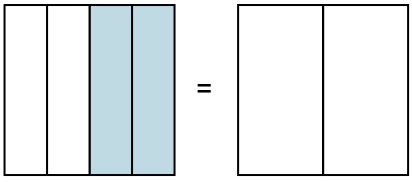
4) $\frac{6}{10} =$



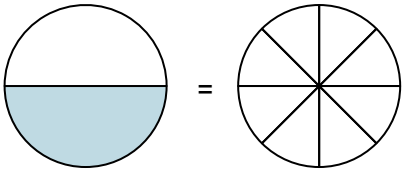
5) $\frac{2}{5} =$



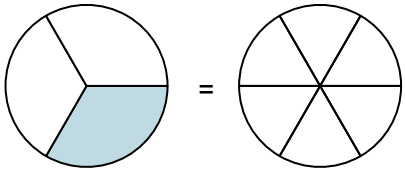
6) $\frac{2}{4} =$



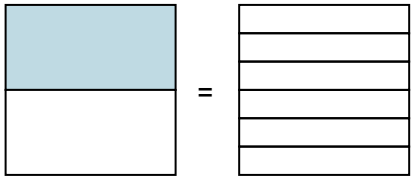
7) $\frac{1}{2} =$



8) $\frac{1}{3} =$



9) $\frac{1}{2} =$



Answers

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Finding Equivalent Fractions

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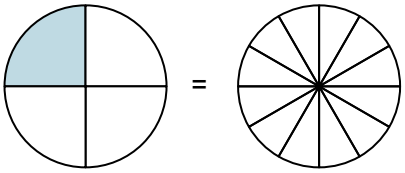
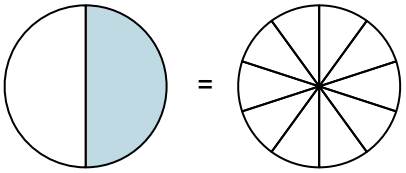
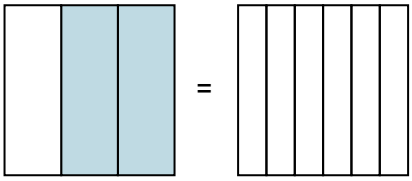
Ex) $\frac{1}{4} = \frac{3}{12}$



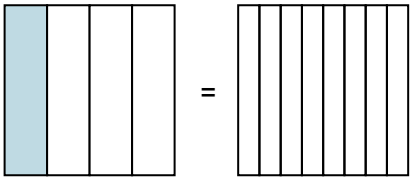
1) $\frac{1}{2} =$



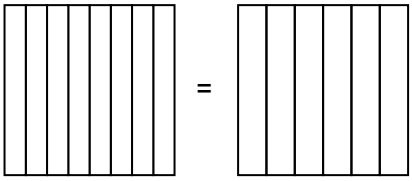
2) $\frac{2}{3} =$



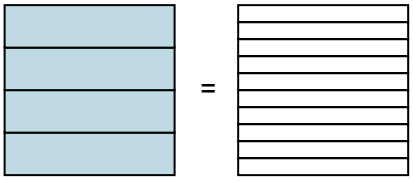
3) $\frac{1}{4} =$



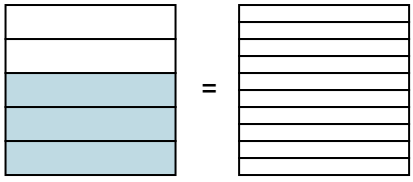
4) $\frac{0}{8} =$



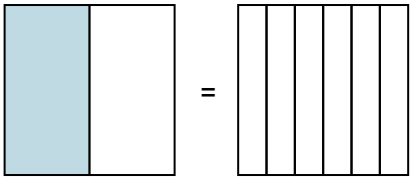
5) $\frac{4}{4} =$



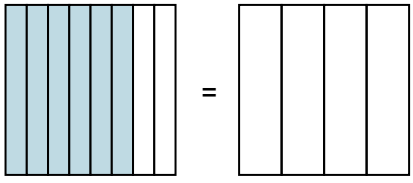
6) $\frac{3}{5} =$



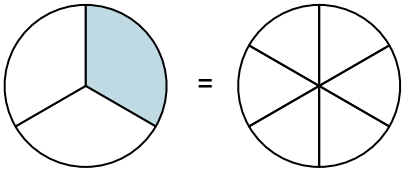
7) $\frac{1}{2} =$



8) $\frac{6}{8} =$



9) $\frac{1}{3} =$



Answers

Ex. $\frac{3}{12}$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

1-9	89	78	67	56	44	33	22	11	0

Finding Equivalent Fractions

Name:

Find the number that makes an equivalent fraction.

Ex) $\frac{4}{10} = \frac{24}{60}$

1) $\frac{3}{7} = \frac{\quad}{63}$

2) $\frac{2}{7} = \frac{\quad}{56}$

3) $\frac{5}{6} = \frac{20}{\quad}$

4) $\frac{1}{2} = \frac{\quad}{10}$

5) $\frac{3}{6} = \frac{12}{\quad}$

6) $\frac{1}{6} = \frac{\quad}{18}$

7) $\frac{1}{2} = \frac{\quad}{12}$

8) $\frac{6}{7} = \frac{\quad}{63}$

9) $\frac{1}{5} = \frac{8}{\quad}$

10) $\frac{4}{9} = \frac{16}{\quad}$

11) $\frac{4}{6} = \frac{40}{\quad}$

12) $\frac{8}{10} = \frac{\quad}{100}$

13) $\frac{1}{3} = \frac{10}{\quad}$

14) $\frac{4}{7} = \frac{\quad}{14}$

15) $\frac{3}{6} = \frac{\quad}{18}$

16) $\frac{2}{3} = \frac{\quad}{18}$

17) $\frac{1}{5} = \frac{\quad}{30}$

18) $\frac{2}{4} = \frac{18}{\quad}$

19) $\frac{8}{9} = \frac{\quad}{63}$

20) $\frac{1}{2} = \frac{\quad}{20}$

Answers

Ex. 60

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

Finding Equivalent Fractions Name:

Find the number that makes an equivalent fraction.

Ex) $\frac{4}{6} = \frac{20}{30}$

1) $\frac{1}{6} = \frac{4}{\quad}$

2) $\frac{8}{10} = \frac{\quad}{50}$

3) $\frac{1}{2} = \frac{\quad}{16}$

4) $\frac{1}{2} = \frac{\quad}{18}$

5) $\frac{1}{8} = \frac{6}{\quad}$

6) $\frac{1}{2} = \frac{5}{\quad}$

7) $\frac{3}{7} = \frac{\quad}{56}$

8) $\frac{8}{10} = \frac{64}{\quad}$

9) $\frac{1}{6} = \frac{\quad}{42}$

10) $\frac{2}{7} = \frac{\quad}{14}$

11) $\frac{4}{6} = \frac{\quad}{48}$

12) $\frac{1}{4} = \frac{\quad}{20}$

13) $\frac{5}{6} = \frac{35}{\quad}$

14) $\frac{3}{4} = \frac{30}{\quad}$

15) $\frac{3}{5} = \frac{15}{\quad}$

16) $\frac{1}{2} = \frac{6}{\quad}$

17) $\frac{6}{10} = \frac{24}{\quad}$

18) $\frac{1}{2} = \frac{7}{\quad}$

19) $\frac{1}{4} = \frac{\quad}{28}$

20) $\frac{1}{2} = \frac{\quad}{4}$

Answers

Ex. 30

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

Finding Equivalent Fractions

Name:

Find the number that makes an equivalent fraction.

Ex) $\frac{6}{7} = \frac{18}{21}$

1) $\frac{2}{6} = \frac{6}{\quad}$

2) $\frac{5}{8} = \frac{20}{\quad}$

3) $\frac{1}{2} = \frac{\quad}{20}$

4) $\frac{3}{8} = \frac{\quad}{64}$

5) $\frac{1}{2} = \frac{\quad}{8}$

6) $\frac{4}{10} = \frac{16}{\quad}$

7) $\frac{4}{8} = \frac{40}{\quad}$

8) $\frac{5}{9} = \frac{10}{\quad}$

9) $\frac{5}{9} = \frac{\quad}{36}$

10) $\frac{7}{9} = \frac{70}{\quad}$

11) $\frac{2}{4} = \frac{14}{\quad}$

12) $\frac{6}{7} = \frac{\quad}{63}$

13) $\frac{2}{3} = \frac{\quad}{12}$

14) $\frac{1}{2} = \frac{\quad}{16}$

15) $\frac{4}{6} = \frac{12}{\quad}$

16) $\frac{2}{8} = \frac{\quad}{32}$

17) $\frac{1}{3} = \frac{5}{\quad}$

18) $\frac{7}{9} = \frac{\quad}{36}$

19) $\frac{1}{6} = \frac{2}{\quad}$

20) $\frac{5}{8} = \frac{50}{\quad}$

Answers

Ex. 18

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

Finding Equivalent Fractions

Name:

Find the number that makes an equivalent fraction.

Ex) $\frac{2}{7} = \frac{4}{14}$

1) $\frac{2}{10} = \frac{\quad}{70}$

2) $\frac{2}{4} = \frac{16}{\quad}$

3) $\frac{1}{7} = \frac{3}{\quad}$

4) $\frac{1}{7} = \frac{10}{\quad}$

5) $\frac{3}{4} = \frac{\quad}{20}$

6) $\frac{5}{9} = \frac{\quad}{72}$

7) $\frac{8}{10} = \frac{64}{\quad}$

8) $\frac{2}{8} = \frac{4}{\quad}$

9) $\frac{7}{9} = \frac{\quad}{36}$

10) $\frac{1}{4} = \frac{\quad}{8}$

11) $\frac{4}{9} = \frac{32}{\quad}$

12) $\frac{1}{2} = \frac{2}{\quad}$

13) $\frac{1}{10} = \frac{2}{\quad}$

14) $\frac{7}{9} = \frac{35}{\quad}$

15) $\frac{1}{3} = \frac{\quad}{18}$

16) $\frac{2}{5} = \frac{\quad}{40}$

17) $\frac{3}{9} = \frac{\quad}{90}$

18) $\frac{2}{7} = \frac{\quad}{56}$

19) $\frac{4}{9} = \frac{\quad}{90}$

20) $\frac{1}{2} = \frac{4}{\quad}$

Answers

Ex. 14

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

Mixed Number Fraction to Improper Fraction

Name:

Convert the mixed number fraction to improper fraction.

$3\ \frac{2}{5}$

First multiply the denominator by the whole number.

$5 \times 3 = 15$

$3\ \frac{17}{5}$

Next add your answer from step 1 to your numerator.

$\frac{17}{5}$

Finally drop the whole number. Now you have your improper fraction.

Ex) $8\frac{1}{3} = \frac{25}{3}$

1) $2\frac{4}{10} =$

2) $6\frac{4}{9} =$

3) $10\frac{1}{2} =$

4) $9\frac{5}{8} =$

5) $2\frac{4}{8} =$

6) $9\frac{4}{6} =$

7) $3\frac{4}{6} =$

8) $1\frac{1}{2} =$

9) $6\frac{6}{8} =$

10) $4\frac{1}{3} =$

11) $10\frac{4}{7} =$

12) $3\frac{2}{4} =$

13) $3\frac{7}{8} =$

14) $7\frac{3}{4} =$

15) $10\frac{2}{9} =$

16) $2\frac{4}{6} =$

17) $3\frac{6}{9} =$

Answers

Ex. $\frac{25}{3}$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0

Improper Fraction to Mixed Number Fraction

Name:

Convert the improper fraction to a mixed number fraction.

$\frac{17}{5}$
First divide the numerator by the denominator.
17 ÷ 5 = 3 r2

$3\ \frac{2}{5}$
The 3 is your whole number. While the remainder become the numerator.

$3\ \frac{2}{5}$
Your denominator stays the same. And now you have your mixed number.

Ex) $\frac{25}{3} = 8\frac{1}{3}$

1) $\frac{24}{10} =$

2) $\frac{58}{9} =$

3) $\frac{21}{2} =$

4) $\frac{77}{8} =$

5) $\frac{20}{8} =$

6) $\frac{58}{6} =$

7) $\frac{22}{6} =$

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

9) $\frac{54}{8} =$

10) $\frac{13}{3} =$

11) $\frac{74}{7} =$

12) $\frac{14}{4} =$

13) $\frac{31}{8} =$

14) $\frac{31}{4} =$

15) $\frac{92}{9} =$

16) $\frac{16}{6} =$

17) $\frac{33}{9} =$

Answers

Ex. $8\frac{1}{3}$

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0