### Basic Math Skills

**core concepts and skills**

<table>
<thead>
<tr>
<th>1. Simplify:</th>
<th>2. Fill in the blanks to make each pair of fractions equivalent:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) (\frac{3}{5} + \frac{1}{5}) =</td>
<td>(a) (\frac{2}{5} = \frac{40}{x})</td>
</tr>
<tr>
<td>(b) (\frac{1}{3} + \frac{1}{5}) =</td>
<td>(b) (\frac{x}{7} = \frac{2000}{700})</td>
</tr>
<tr>
<td>(c) (\frac{3}{5} - \frac{1}{5}) =</td>
<td>(c) (\frac{7}{x} = \frac{28}{100})</td>
</tr>
<tr>
<td>(d) (\frac{1}{3} \times \frac{1}{5}) =</td>
<td>(d) (\frac{4}{3} = \frac{48}{x})</td>
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<tr>
<th>3. Simplify:</th>
<th>4. Simplify:</th>
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<tbody>
<tr>
<td>(a) (\frac{1}{4} + \frac{3}{8}) =</td>
<td>(a) (\frac{621}{3}) =</td>
</tr>
<tr>
<td>(b) (\frac{17}{20} + \frac{2}{15}) =</td>
<td>(b) (\frac{7}{20} \div 100 = )</td>
</tr>
<tr>
<td>(c) (\frac{7}{10} - \frac{1}{2}) =</td>
<td>(c) (100 \div \frac{7}{20} = )</td>
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<tr>
<th>5. Express each number as a fraction with given denominator:</th>
<th>6. Give each answer in decimal form:</th>
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<tbody>
<tr>
<td>(a) Write 1 as a fraction: (\frac{6}{6})</td>
<td>(a) (37.2 \times 10 = )</td>
</tr>
<tr>
<td>(b) Write 0 as a fraction: (\frac{17}{17})</td>
<td>(b) (37.2 \times 1000 = )</td>
</tr>
<tr>
<td>(c) Write 8 as a fraction: (\frac{5}{5})</td>
<td>(c) (37.2 \div 10 = )</td>
</tr>
<tr>
<td></td>
<td>(d) (37.2 \div 100 = )</td>
</tr>
<tr>
<td></td>
<td>(e) (4.5 \times 0.01 = )</td>
</tr>
<tr>
<td></td>
<td>(f) (4.5 \div 0.001 = )</td>
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</table>
7. (a) What is the **sum** of 3 and 4?

(b) What is the **product** of 3 and 4?

(c) Name three **factors** of 20.

(d) Name three **multiples** of 20.

(e) List all **prime** numbers less than 20.

8. (a) Which is bigger, \( \frac{3}{8} \) or \( \frac{3}{800} \)?

(b) Which is bigger, \( \frac{3}{800} \) or \( \frac{800}{3} \)?

(c) Which is bigger, \( \frac{1}{8} \) or \( \frac{8}{1} \)?

(d) What is the **reciprocal** of 4?

9. (a) Which is bigger, 0.09 or 900?

(b) Which is bigger, 9.0 or 0.9?

(c) Which is bigger, 0.09 or 0.009?

(d) Which is bigger, 0.729 or 0.81?

(e) Which is bigger, 0.049 or 0.04?

10. Simplify:

(a) \( 28 + 0.7 = \) 

(b) \( 28 - 0.7 = \)

(c) \( (28)(0.7) = \)

(d) \( 28 \div 0.7 = \)

(e) \( 8 + 6(0.5)^2 = \)

11. Fill in each blank with a number to make each statement true.

If it's not possible, write "impossible".

(a) \( 4 \times \_\_\_\_\_\_\_\_\_\_ = 20. \)

(b) \( 20 \times \_\_\_\_\_\_\_\_\_\_\_ = 4. \)

(c) \( 12 \times \_\_\_\_\_\_\_\_\_\_\_ = 0. \)

(d) \( 0 \times \_\_\_\_\_\_\_\_\_\_\_ = 12. \)

(e) \( 0 \times \_\_\_\_\_\_\_\_\_\_\_ = 0. \)

12. Simplify:

(a) \( 5^3 = \)

(b) \( 2^5 = \)

(c) \( 0^{48} = \)

(d) \( 1^{2007} = \)

(e) \( 17^1 = \)
13. Convert each percent to decimal:
   (a) 4%
   (b) 47%
   (c) 450%
   (d) 70%
   (e) 0.3%

14. Convert each decimal to percent:
   (a) 0.08
   (b) 0.4
   (c) 0.007
   (d) 37.2
   (e) 0.059

15. Circle the best answer:
   (a) 70% of $8000 is
       $5.60 / $56 / $560 / $5600 / $56,000
   (b) 450% of $20 is
       $0.09 / $0.90 / $9 / $90 / $900
   (c) 0.3% of $8000 is
       $2.40 / $24 / $240 / $2400 / $24,000

16. Complete each statement:
   (a) 48 is _____% of 1200.
   (b) 720 is _____% of 1200.
   (c) 9 is _____% of 1200.
   (d) 6000 is _____% of 1200.
   (e) 450 is _____% of 1200.

17. There are 30 pizzas for 48 kids.
   Make two statements describing the situation.
   (a) one using the phrase "per pizza":
   (b) one using the phrase "per kid":

18. Simplify:
   (a) $2 + 7 - 11 =$
   (b) $(2+7)+11 =$
   (c) $2 + 7(11) =$
   (d) $2(7)+11 =$
   (e) $2(7+11) =$
   (f) $100 ÷ 5 × 2^2$
<p>| | | | |</p>
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| **19.** (a) Round to the nearest hundred: | **20.** You have 24 cookies to pass out to 36 children.  
Round to the nearest hundredth: |   | How many cookies does each child get? |
|   | 873.149 |   |   |
| **(b) Round to the nearest hundredth:** | **(c) Round to the nearest tenth:** | **(d) Round to the nearest thousand:** |   |
|   | 873.149 | 873.149 | 873.149 |

**21.** You have 24 pizzas.  
Each guest should get \( \frac{1}{2} \) of a pizza.  
How many guests can you feed?  

**22.** Lena has 60 feet of ribbon.  
She uses \( \frac{1}{4} \) of the ribbon on her hair.  
She uses \( \frac{1}{3} \) of the ribbon on packages.  
How much ribbon will be left?  

**23.** Mark can type 400 words in 5 minutes.  
John can type 675 words in 9 minutes.  
Who is the faster typist?  

**24.** A recipe calls for 5 cups of water for every 2 cups of juice concentrate.  
How much water is needed for 17 cups of concentrate?