

# Multiplying Fractions Homework



No calculator!

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|--|---|--|
| <p style="text-align: center;"><b>Literacy</b></p> <p><math>\frac{3}{4}</math> means the same as <math>3 \div 4</math></p> <p>This means that <b>multiplying by <math>\frac{3}{4}</math></b> is the same as <math>\times 3</math> and <math>\div 4</math></p> <p><math>\frac{3}{4}</math> <i>of</i> <math>\frac{2}{3}</math> means the same as <math>\frac{3}{4} \times \frac{2}{3}</math><br/>         which is <math>\frac{3 \times 2}{4 \times 3} = \frac{6}{12} = \frac{1}{2}</math></p>   | <p style="text-align: center;"><b>Research</b></p> <p>What is the definition of <b>'factorial'</b>?<br/> <i>Note: '7 factorial' is written 7! (the symbol is as an exclamation mark).</i></p> <p>Use your definition to find:<br/> <math>3! =</math>    <math>5! =</math>    <math>\frac{5!}{3!} =</math>    <math>\frac{3!}{5!} =</math></p> | <p style="text-align: center;"><b>Memory</b></p> <ul style="list-style-type: none"> <li>To find a fraction of any number, <b>multiply</b> by the <b>numerator</b> and <b>divide</b> by the <b>denominator</b>.</li> <li>To find a fraction of a fraction, <b>multiply the numerators</b> to find the new numerator, and <b>multiply the denominators</b> to find the new denominator.</li> </ul> |
| <p style="text-align: center;"><b>Skills</b></p> <p>1) <math>\frac{4}{5} \times \frac{2}{7} =</math>                      5) <math>\frac{14}{15} \times \frac{3}{4} =</math></p> <p>2) <math>\frac{2}{5} \times \frac{4}{7} =</math>                      6) <math>\frac{15}{8} \times \frac{2}{7} =</math></p> <p>3) <math>\frac{6}{17} \times \frac{3}{10} =</math>                      7) <math>\frac{13}{17} \times \frac{1}{2} =</math></p> <p>4) <math>\frac{8}{25} \times \frac{5}{12} =</math>                      8) <math>\frac{8}{9} \times \frac{6}{7} =</math></p> <p style="text-align: center;"><i>Simplify your answers where possible. Show ALL your working.</i></p> |   | <p style="text-align: center;"><b>Stretch</b></p> <p>1) <math>\frac{28}{45} \times \frac{5}{14} =</math></p> <p>2) <math>\frac{2}{5} \times \frac{3}{4} \times \frac{5}{3} =</math></p> <p>3) <math>\frac{4}{7} \times \frac{3}{10} \times \frac{7}{11} =</math></p> <p>4) <math>\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times \frac{5}{6} =</math></p>            |

You need to **read** and **learn** the **Literacy** and **Memory** sections, **look up** answers to the **Research** section, **answer all** questions from the **Skills** section, and (unless you have already spent more than 45 minutes on this homework) **attempt** the **Stretch** section. Answers can be written on the sheet or in your book if you need more space.

# Multiplying Fractions Homework SOLUTIONS



No calculator!

| <h2 style="text-align: center;">Literacy</h2> <p><math>\frac{3}{4}</math> means the same as <math>3 \div 4</math></p> <p>This means that <b>multiplying by <math>\frac{3}{4}</math></b> is the same as <math>\times 3</math> and <math>\div 4</math></p> <p><math>\frac{3}{4}</math> <i>of</i> <math>\frac{2}{3}</math> means the same as <math>\frac{3}{4} \times \frac{2}{3}</math> which is <math>\frac{3 \times 2}{4 \times 3} = \frac{6}{12} = \frac{1}{2}</math></p> | <h2 style="text-align: center;">Research</h2> <p>What is the definition of <b>'factorial'</b>?<br/> <i>Note: '7 factorial' is written 7! (the symbol is as an exclamation mark).</i></p> <p style="text-align: center;"><math>n! = n(n-1)(n-2) \dots (2)(1)</math></p> <p>Use your definition to find:</p> <p><math>3! = 3 \times 2 \times 1 = 6</math></p> <p><math>5! = 5 \times 4 \times 3 \times 2 \times 1 = 120</math></p> <p><math>\frac{5!}{3!} = \frac{5 \times 4 \times 3 \times 2 \times 1}{3 \times 2 \times 1} = 5 \times 4 = 20</math></p> <p><math>\frac{3!}{3!} = \frac{1}{1} = 1</math></p> <p><math>\frac{5!}{5!} = \frac{1}{1} = 1</math></p> | <h2 style="text-align: center;">Memory</h2> <ul style="list-style-type: none"> <li>To find a fraction of any number, <b>multiply</b> by the <b>numerator</b> and <b>divide</b> by the <b>denominator</b>.</li> <li>To find a fraction of a fraction, <b>multiply the numerators</b> to find the new numerator, and <b>multiply the denominators</b> to find the new denominator.</li> </ul> |
|--|--|---|
| <h2 style="text-align: center;">Skills</h2>  |  | <h2 style="text-align: center;">Stretch</h2>  |
| <p>1) <math>\frac{4}{5} \times \frac{2}{7} = \frac{8}{35}</math></p> <p>2) <math>\frac{2}{5} \times \frac{4}{7} = \frac{8}{35}</math></p> <p>3) <math>\frac{6}{17} \times \frac{3}{10} = \frac{18}{170} = \frac{9}{85}</math></p> <p>4) <math>\frac{8}{25} \times \frac{5}{12} = \frac{40}{300} = \frac{2}{15}</math></p>  | <p>5) <math>\frac{14}{15} \times \frac{3}{4} = \frac{42}{60} = \frac{7}{10}</math></p> <p>6) <math>\frac{15}{8} \times \frac{2}{7} = \frac{30}{56} = \frac{15}{28}</math></p> <p>7) <math>\frac{13}{17} \times \frac{1}{2} = \frac{13}{34}</math></p> <p>8) <math>\frac{8}{9} \times \frac{6}{7} = \frac{48}{63} = \frac{16}{21}</math></p>  | <p>1) <math>\frac{28}{45} \times \frac{5}{14} = \frac{2}{9}</math></p> <p>2) <math>\frac{2}{5} \times \frac{3}{4} \times \frac{5}{3} = \frac{1}{2}</math></p> <p>3) <math>\frac{4}{7} \times \frac{3}{10} \times \frac{7}{11} = \frac{6}{55}</math></p> <p>4) <math>\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times \frac{5}{6} = \frac{1}{6}</math></p>        |
| <p style="text-align: center;"><i>Simplify your answers where possible. Show ALL your working.</i></p>   |  |   |

You need to **read** and **learn** the **Literacy** and **Memory** sections, **look up** answers to the **Research** section, **answer all** questions from the **Skills** section, and (unless you have already spent more than 45 minutes on this homework) **attempt** the **Stretch** section. Answers can be written on the sheet or in your book if you need more space.