

# Independent Activity

I can solve reasoning questions using my knowledge of common factors, common multiples and prime numbers.



Solve these reasoning questions. Choose the challenge best for you.

★	★★	★★★			
<p>Tomas says that the highest common factor of 12 and 16 is 12. Is he correct? Explain your answer.</p> <hr/> <hr/> <hr/> <hr/>	<p>Write a two-digit number that has 2, 3 and 7 as factors.</p> <hr/>	<p>Choose two cards each time to make the following two-digit numbers.</p> <table border="1"><tr><td>1</td><td>5</td><td>2</td></tr></table> <p>The highest common factor of 36 and 48: <input type="text"/> <input type="text"/></p> <p>The highest common factor of 45 and 60: <input type="text"/> <input type="text"/></p>	1	5	2
1	5	2			
<p>Write two common multiples of 3 and 8 that are less than 60.</p> <hr/>	<p>Write a value for <math>y</math> so that <math>10y + 2</math> is a common multiple of 3 and 8.</p> <hr/>	<p>Write a value for <math>y</math> so that <math>12y + 3</math> is a common multiple of 3, 7 and 9.</p> <hr/>			
<p>Johan thinks of two prime numbers. He adds them together to make 28. What could his numbers be?</p> <hr/>	<p>Write three prime numbers that add together to make 87.</p> <hr/>	<p>Write three prime numbers which multiply to make 1001.</p> $\square \times \square \times \square = 1001$			

# Independent Activity Answers

Question	Answer
Tomas says that the highest common factor of 12 and 16 is 12. Is he correct? Explain your answer.	<p>★ <i>Child's own answer, e.g. Tomas is incorrect. 12 is not a factor of 16. The highest common factor of 12 and 16 is four.</i></p>
Write a two-digit number that has 2, 3 and 7 as factors.	<p>★★ <b>84</b></p>
Choose two cards each time to make the following two-digit numbers.	<p>★★★ The highest common factor of 36 and 48: <b>12</b> The highest common factor of 45 and 60: <b>15</b></p>
Write two common multiples of 3 and 8 that are less than 60.	<p>★ <b>24 and 48</b></p>
Write a value for $y$ so that $10y + 2$ is a common multiple of 3 and 8.	<p>★★ <b><math>y = 7</math></b></p>
Write a value for $y$ so that $12y + 3$ is a common multiple of 3, 7 and 9.	<p>★★★ <b><math>y = 5</math></b></p>
Johan thinks of two prime numbers. He adds them together to make 28. What could his numbers be?	<p>★ <b>5 and 23</b> <b>11 and 17</b></p>
Write three prime numbers that add together to make 87.	<p>★★ <b>17, 29, 41</b></p>

Write three prime numbers which multiply to make 1001.



$$\boxed{7} \times \boxed{11} \times \boxed{13} = 1001$$