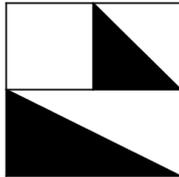
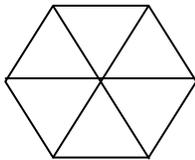
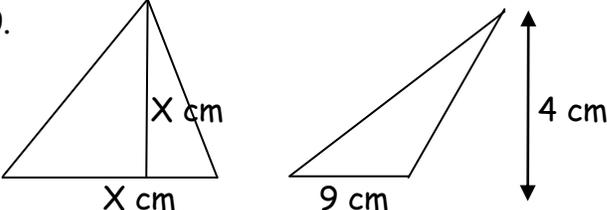


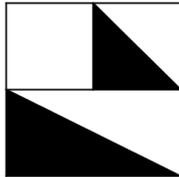
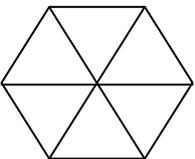
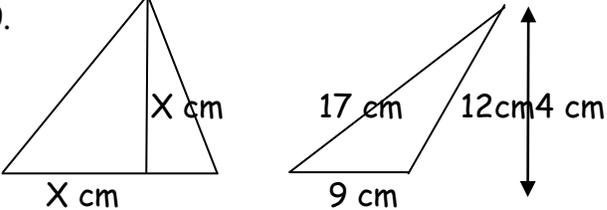


UNITED KINGDOM MATHEMATICS TRUST

<p>1. What is 10% of $\frac{3}{4}$ as a decimal?</p>	<p>2. Which factors of 360 are also multiples of 12?</p>
<p>3. 1,2,4.... Think of 3 different ways this sequence could continue. What is the rule to find the next term in each of your sequences?</p>	<p>4. What fraction of this square is shaded?</p> 
<p>5. It takes 10 minutes to fill a bath with just the hot tap and 15 minutes to fill it with just the cold tap. How long will it take to fill the bath if you run both taps at once?</p>	<p>6. How many small boxes 2cm x 3cm x 1cm can you fit in a big box 1m x 3m x 1m?</p>
<p>7. You can make a hexagon from six equilateral triangles put together like this.</p>  <p>What would the angles be in 9 congruent triangles put together to make a nonagon in a similar way?</p>	<p>8. There are 3 sun umbrellas in the sand. Their owners come back to collect them, but don't look carefully at them. What is the chance that exactly two of them take the right umbrella home?</p>
<p>9. At Christmas 2012, Gran gave Arthur, Bob and Charlie £25 to share in the ratio of their ages. Arthur is two years older than Bob. Charlie and Arthur are twins, both born on February 28th, 2004. How much did each boy receive?</p>	<p>10.</p>  <p>If these two triangles have the same area, what is the value of X ?</p>



UNITED KINGDOM MATHEMATICS TRUST

<p>1. What is 10% of $\frac{3}{4}$ as a decimal? $0.1 \times 0.75 = 0.075$</p>	<p>2. Which factors of 360 are also multiples of 12? $12, 24, 36, 60, 72, 120, 180$ and 360</p>
<p>3. 1,2,4.... Think of 3 different ways this sequence could continue. What is the rule to find the next term in each of your sequences? Some possibilities are: $\dots 8, 16, 32$ Double last number $\dots 7, 11, 16$ Difference increases by 1 $\dots 5, 7, 8, 10$ Two "add 3" sequences, fitted together</p>	<p>4. What fraction of this square is shaded?</p>  <p>$\frac{1}{4} + \frac{1}{8} = \frac{3}{8}$</p>
<p>5. It takes 10 minutes to fill a bath with just the hot tap and 15 minutes to fill it with just the cold tap. How long will it take to fill the bath if you run both taps at once? $v/10 + v/15 = v/6$ so 6 minutes</p>	<p>6. How many small boxes 2cm x 3cm x 1cm can you fit in a big box 1m x 3m x 1m? $50 \times 100 \times 100 = 500,000$ boxes</p>
<p>7. You can make a hexagon from six equilateral triangles put together like this.</p>  <p>What would the angles be in 9 congruent triangles put together to make a nonagon in a similar way? Isosceles $40^\circ, 70^\circ, 70^\circ$</p>	<p>8. There are 3 sun umbrellas in the sand. Their owners come back to collect them, but don't look carefully at them. What is the chance that exactly two of them take the right umbrella home? No chance at all - if two get it right, the third must get it right too!</p>
<p>9. Gran gives Arthur, Bob and Charlie £25 to share in the ratio of their ages. Arthur is two years older than Bob and Charlie and Arthur and Charlie are twins born in 2004. How much does each boy get? Arthur £9, Bob £7, Charlie £9</p>	<p>10.</p>  <p>If these two triangles have the same area, what is the value of X? $x=6$ (area = 18cm^2)</p>