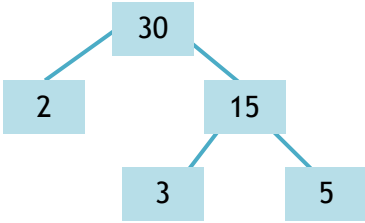
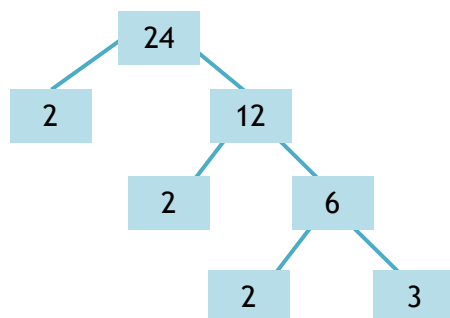


One point questions	Two point questions	Two point questions	Three point questions
<p>e.g. $4 \times \square = 24$. As $4 \times 6 = 24$, fill in ... $4 \times \boxed{6} = 24$</p> <p>1. $3 \times \square = 24$</p> <p>2. $6 \times \square = 24$</p> <p>3. $\square \times 4 = 36$</p> <p>4. $\square \times 8 = 48$</p> <p>5. $\square \div 2 = 9$</p> <p>6. $\square \div 5 = 6$</p> <p>7. $32 \div \square = 4$</p> <p>8. $35 \div \square = 7$</p>	<p>e.g. $4 \times 0.6 = 2.\underline{4}$ as there is ONE decimal place (underlined)</p> <p>Fill in missing boxes:</p> <p>1. $3 \times 0.4 = \square$</p> <p>2. $6 \times 0.3 = \square$</p> <p>3. $0.7 \times 4 = \square$</p> <p>4. $0.2 \times 8 = \square$</p> <p>5. $0.6 \div 2 = \square$</p> <p>6. $1.5 \div 5 = \square$</p> <p>7. $3.2 \div \square = 0.8$</p> <p>8. $3.5 \div \square = 0.5$</p>	<p>e.g. Find the factors of 20: 1×20; 2×10; 4×5.</p> <p>Factors of 20 = 1, 2, 4, 5, 10, 20</p> <p>1. Factors of 12</p> <p>2. Factors of 28</p> <p>3. Factors of 18</p> <p>4. Factors of 36</p> <p>5. Five Multiples of 9</p> <p>6. Five Multiples of 12</p> <p>7. Four Multiples of 18</p>	<p>e.g. Prime factors of 30</p>  <p>Prime factors of 30 = $2 \times 3 \times 5$</p> <p>Find as a product of its primes:</p> <p>1. 20</p> <p>2. 28</p> <p>3. 42</p>

Five point questions

e.g. Find the Highest Common Factor (HCF) of 24 and 36.



Prime factors of 24 = $2 \times 2 \times 2 \times 3$

Similarly $36 = 2 \times 2 \times 3 \times 3$

Now we cross off the common factors...

$$\begin{array}{l}
 24 = \cancel{2} \times \cancel{2} \times 2 \times \cancel{3} \\
 36 = \cancel{2} \times \cancel{2} \times \cancel{3} \times 3 \\
 \hline
 \text{HCF} = 2 \times 2 \times 3 = \underline{12}
 \end{array}$$

Find the HCF of the following:

1. 24 and 30

Find the HCF of...

2. 36 and 30

3. 36 and 60

4. 27 and 90

Five point questions

e.g. Find the Lowest Common Multiple (LCM) of 24 and 36.

Use two methods A or B

A: 24, 48, 72, 96, 120, ...
36, 72,

$$\therefore \text{LCM} = \underline{72}$$

$$\begin{array}{l}
 \text{B: } 24 = \cancel{2} \times \cancel{2} \times 2 \times \cancel{3} \\
 36 = \cancel{2} \times \cancel{2} \times \cancel{3} \times 3
 \end{array}$$

$$\text{LCM} = \boxed{2 \times 2 \times 3} \times 2 \times 3 = \underline{72}$$

HCF as before

Find the LCM of the following pairs of numbers:

1. 18 and 24

2. 36 and 45

3. 60 and 72

4. 16 and 36

Answers and teacher notes:

A challenge whereby pupils can choose, or be directed to attempt questions that meet their ability. They score appropriate points depending on the difficulty. The object is to score as many points in a set time.

One-point questions [8]

(1) 8 (2) 4 (3) 9 (4) 6 (5) 18 (6) 30 (7) 8 (8) 5

Two-point questions [16 + 14]

(1) 1.2 (2) 1.8 (3) 2.8 (4) 1.6 (5) 0.3 (6) 0.3 (7) 4 (8) 7;

(1) 1, 2, 3, 4, 6, 12 (2) 1, 2, 4, 7, 14, 28 (3) 1, 2, 3, 6, 9, 18 (4) 1, 2, 3, 4, 6, 9, 12, 18, 36 (5) 9, 18, 27, 36, 45... (6) 12, 24, 36, 48, 60... (7) 18, 36, 54, 72...

Three-point questions [12]

(1) $2 \times 2 \times 5$ (2) $2 \times 2 \times 7$ (3) $2 \times 3 \times 7$

Five-point questions [15]

(1) $HCF = 2 \times 3 = 6$ (2) $HCF = 2 \times 3 = 6$ (3) $HCF = 2 \times 2 \times 3 = 12$ (4) $HCF = 3 \times 3 = 9$.

(1) $LCM = 72$ (2) $LCM = 180$ (3) $LCM = 360$ (4) $LCM = 144$.

Total points = 87

Additional remarks:

Two-point questions - assign 1 mark for correct numerical result (without the decimal point e.g. 12 instead of 1.2)

Two-point questions - assign 1 mark for more than half the factors are given.

Three-point questions - assign 1 mark for any correct pair of factors with one of them being prime (e.g. $12 = 2 \times 6$)

Five-point questions [HCF] - assign 2 marks for the first correct product of prime factors, a further 1 mark for the second correct product. Assign 2 marks for the final correct answer (this applies to the answer only given)

$24 = 2 \times 2 \times 2 \times 3$; $24 = 2 \times 3 \times 5$; $36 = 2 \times 2 \times 3 \times 3$;

$60 = 2 \times 2 \times 3 \times 5$; $27 = 3 \times 3 \times 3$; $90 = 2 \times 3 \times 3 \times 5$;

Five-point questions [LCM] - assign 2 marks for the first correct list of multiples, a further 1 mark for the second correct list. Assign 2 marks for the final correct answer (this applies to the answer only given)