

Name:

Exam Style Questions

Lowest Common Multiples  
Highest Common Factors



Corbettmaths

Equipment needed: Pen and Calculator

### Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

Videos 218, 219



Answers and Video Solutions



1.



12	28	100	
40	64		
35	6	18	38

From the box above, choose two numbers that:

(a) have a common factor of 10

40 and 100  
(1)

(b) have a common multiple of 24

6 and 12  
(1)

(c) have a common factor of 7

35 and 28  
(1)

(d) have a common multiple of 200

40 and 100  
(1)

2. (a) List the factors of 28



1 2 4 7 14 28  
.....  
(1)

(b) Write down the highest common factor (HCF) of 21 and 28

28: (1) 2 4 (7) 14 28  
21: (1) 3 (7) 21

7  
.....  
(1)

3. Write down the highest common factor (HCF) of 12 and 16.



12: (1) (2) 3 (4) 6 12  
16: (1) (2) (4) 8 16

4  
.....  
(2)

4. Write down the lowest common multiple (LCM) of 9 and 12.



9 18 27 36  
12 24 36

36  
.....  
(2)

5. Write down two numbers that have a highest common factor (HCF) of 10



20 and 30  
.....  
(2)

6. A red light flashes every 6 seconds.  
A yellow light flashes every 4 seconds.  
They both flash at the same time.



After how many seconds will they next both flash at the same time?

6 12  
4 8 12

.....12.....seconds  
(2)

7. Tilly the dog barks every 9 seconds.  
Billy the dog barks every 12 seconds.  
They both bark at the same time.



After how many seconds will they next bark at the same time?

9 18 27 36  
12 24 36

.....36.....seconds  
(2)

8. Black pens are sold in packets of 10  
 Red pens are sold in packets of 4  
 Green pens are sold in packets of 3



Minah wants to buy the same number of black pens, red pens and green pens.

Work out the smallest number of each packet se should buy.

10 20 30 40 50 60  
 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60  
 3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60

Number of packets of black pens ..... 6

Number of packets of red pens ..... 15

Number of packets of green pens ..... 20

(2)

9. Mr Jones repaints his fence every 6 years.  
 Mr Jones repaints his front door every 9 years.



He repainted both the fence and front door in 2025.

When is the next year that he repaint both the fence and front door?

2025 2031 2037 2043

2025 2034 2043

..... 2043

(2)

10. Write down three numbers that have a lowest common multiple (LCM) of 24



3   6   9   12   15   18   21   24  
 8   16   24  
 12   24

3, 8, 12  
 (2)

11. Rosie and Sophie jog around a rectangular hockey pitch for 45 minutes. *2700 seconds*  
 They place an orange cone at the starting point and begin running at the same time.



Each lap takes Rosie 2 minutes *120 seconds*  
 Each lap takes Sophie 100 seconds.

After they start running, how many times do Rosie and Sophie pass the orange cone at the same time?

Sophie   100   200   300   400   500   (600)   700   800   900   1000   1100  
 (200)   1300   1400   1500   1600   1700   (1800)   1900   2000   2100  
 2200   2300   (2400)   2500   2600   2700

Rosie   120   240   360   480   (600)   720   840   960   1080   (1200)   1320  
 1440   1560   1680   (1800)   1920   2040   2160   2280   (2400)   2520  
 2640   2760

4  
 (4)

12. A blue light flashes every 8 minutes while a pink light flashes every 54 minutes. Both lights flash together at 2pm.



When is the next time that both lights will flash together again?

54 = 54 108 162 216  
 multiple of 8? x x x ✓

216 mins = 3hr 36 mins

5:36 pm

(2)

13. Mary is organising a charity hot dog sale. There are 18 bread rolls in each packet. There are 15 hot dogs in each packet. Mary buys exactly the same number of bread rolls as hot dogs.



What is the smallest number of each packet that Mary can buy?

18 36 54 72 90  
 15 30 45 60 75 90

5 ..... packets of bread rolls

6 ..... packets of hot dogs

(3)

14. Helen thinks of two numbers.



The Highest Common Factor (HCF) of her two numbers is 5

The Lowest Common Multiple (LCM) of her two numbers is a multiple of 12

Write down two possible numbers that Helen could be thinking of.

e.g. 5 and 60

$$\text{LCM} = 60$$

$$\text{HCF} = 5$$

..... 5 ..... and ..... 60 .....  
(2)

15. Trains leave Bristol



to Cardiff every 15 minutes

to London every 21 minutes

A train to Cardiff and a train to London both leave Bristol at 11am.

At what time will a train to Cardiff and a train to London next leave Bristol at the same time?

15 30 45 60 75 90 105  
21 42 63 84 105

..... 12:45 pm .....  
(3)

16. Jessica writes down two numbers, **a** and **b**.



- a** is an even number.
- b** is a multiple of 3

The highest common factor (HCF) of **a** and **b** is 25

Write down possible values for **a** and **b**.

e.g.  $a = 100$  even       $b = 75$  multiple of 3

HCF of 100 & 75 = 25

$a = \dots 100 \dots$   
 $b = \dots 75 \dots$   
(3)

17. Trains to Portadown leave a train station every 28 minutes.  
Trains to Portrush leave a train station every 16 minutes



A train to Portadown and a train to Portrush both leave the train station at 8am.

When will a train to Portadown and a train to Portrush both leave the train station at the same time?

28   56   84   112  
16   32   48   64   80   96   112

1hr 52 mins

$9:52 \text{ am}$   
.....  
(3)

18. The Highest Common Factor (HCF) of two numbers is 6.  
The Lowest Common Multiple (LCM) of the same numbers is 60.



What are the two numbers?

e.g. 6 and 60

$$\text{HCF} = 6$$

$$\text{LCM} = 60$$

..... 6 ..... and ..... 60 .....  
(2)

19. A red light flashes every 3 seconds.  
A yellow light flashes every 8 seconds.  
A green light flashes every 11 seconds  
They all flash at the same time.



After how many seconds will they next all flash at the same time?

$$3 \times 8 \times 11 = 264$$

..... 264 .....seconds  
(2)

20. Last year James started collecting mini figures.  
He displays them in cases.



A bag of 6 mini figures costs £15  
Each display case holds 16 figures and costs £9

Last year James bought enough bags of mini figures and display cases to  
have between 50 and 100 mini figures  
fill every display case he bought.

Work out how much James spent on his collection.

16    32    48    64    80    96  
x    x    x    ✓    ✓    ✓

between  
50 & 100?

$$96 \div 6 = 16 \text{ bags}$$

multiple  
of 6?

x    x    ✓

6 display cases

$$6 \times £9 = £54$$

16 bags

$$16 \times £15 = £240$$

£.....  
294  
(4)