1 Homework sheet

Name_____

1. Identify the prime numbers in the following sets:
   (a) $\{3, 6, 10, 13, 18, 21\}$
   (b) $\{40, 41, 42, 45, 46, 47, 49\}$
   (c) $\{87, 89, 91, 93, 95, 97\}$
2. Find the prime factors of:
   (a) 14
   (b) 39
   (c) 77
3. Draw factor trees for the following numbers and write the numbers as a product of prime factors.
   (a) 120
   (b) 94
   (c) 630
4. (please show working for each) Find the Highest Common Factor of:
   (a) 40 and 64
   (b) 42 and 56
   (c) 54 and 78
5. (please show working for each) Find the Lowest Common Multiple of:
   (a) 8 and 12
   (b) 9 and 15
   (c) 28 and 35
6. 5678 has prime factors 2, 17, 167.
   (a) Draw a factor tree for the number.
   (b) Write a factor list for the number.
7. Carol is making lunch packs. She has 21 vegetarian sushi rolls and 35 rice and seaweed rolls . What is the maximum number of packs she can make and how many of each roll will be in a pack?
8. Mary can paint a house in 6 days and Miranda can paint a house in 9 days. Working together, how long will it take them to paint one house?

2 Homework and class practice questions for the test

Name_____

1. Definitions

   (a) What is the definition of a **factor**?

   (b) What is the definition of a **prime number**?

2. In each set of Whole Numbers, circle the prime numbers.
   (if 2,3,5 and 7 don't divide into them then they will be prime).

   (a) {10, 3, 21, 17, 15, 11, 16, 4, 2, 23}

   (b) {65, 66, 67, 68, 69, 70, 71, 72, 73, 74}

3. Make factor trees for the following numbers and write each number as a product of its prime factors.

   (a) 100 (b) 120 (c) 164

4. Find the **Highest Common Factor** for the following pairs of numbers

   (a) 80, 52 (b) 96, 36

5. Find the **Lowest Commmon Multiple** for the following pairs of numbers

   (a) 12, 26 (b) 18, 33

6. Write factor lists for:

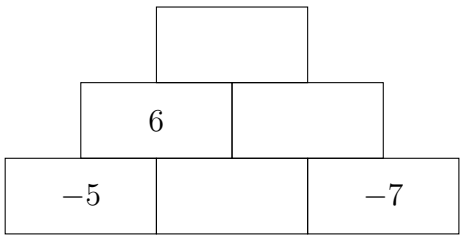
   (a) 144 (b) 120

7. Calculate the following

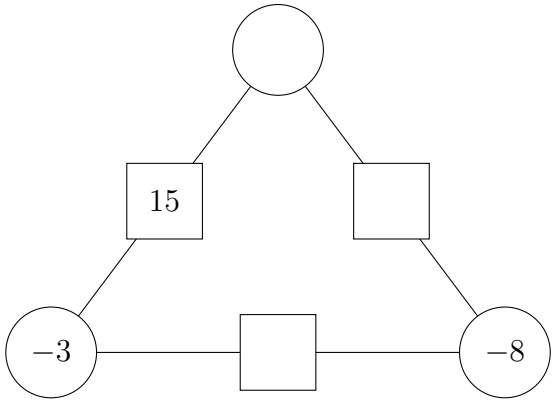
   (a) $-17 - 20 =$ (c) $-14 + (-3) =$ (e) $15 \div (-3) =$

   (b) $-2 - (-14) =$ (d) $-17 \times (-3) =$ (f) $4 \times (-8) =$

8. The two bricks below add to the brick above. Fill in the missing bricks:



9. The numbers in the circles **multiply** to give the number in the squares between them. Fill in the missing spaces:



10. (Difficult)Calculate the following

    (a) $4^2 \div 2 =$
    (b) $-3 \times -4 \div (5+1) =$
    (c) $-2 \times (5 + -9) =$
    (d) $(2^5 + 2) \times 3 =$
    (e) $(-2+5) \times \sqrt{36} =$
    (f) $4^4 \times 0.5 + \sqrt{121} =$

11. Write the following Decimals as Fractions

    (a) 0.46
    (b) 0.968
    (c) $0.\dot{4}$
    (d) $0.\dot{8}$

12. Write the following as fractions:

    (a) $\left(\frac{1}{2}\right)^5$
    (b) $\left(\frac{1}{3}\right)^2$
    (c) 5^{-3}
    (d) 10^{-2}

13. Simplify:

    (a) $\sqrt{2} \times \sqrt{3}$
    (b) $\sqrt{5} \times \sqrt{6}$

14. Calculate:

    (a) $\sqrt{36}$
    (b) $\sqrt{64}$
    (c) $\sqrt{81}$
    (d) $\sqrt{121}$

3 Homework and class practice questions for the test

Name_____

1. Find the **Lowest Commmon Multiple** for the following pairs of numbers

   (a) 9, 24

2. Calculate the following

   (a) $-7 + 13 =$
   (b) $5 - (-10) =$
   (c) $14 + (-18) =$
   (d) $9 \times (-6) =$
   (e) $-35 \div (-5) =$
   (f) $-4 \times (-6) =$

3. Find the **Highest Common Factor** for the following pairs of numbers

   (a) 110, 90

4. In each set of Whole Numbers, circle the prime numbers.
   (if 2,3,5 and 7 don't divide into them then they will be prime).

   (a) {5, 83, 19, 57, 11, 93, 47,97, 51, 39}

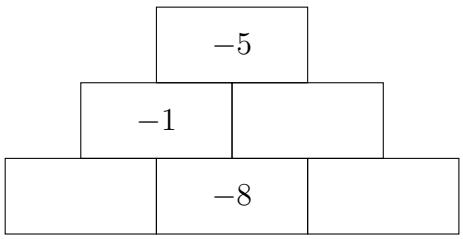
5. Make factor trees for the following numbers and write each number as a product of its prime factors.

   (a) 196

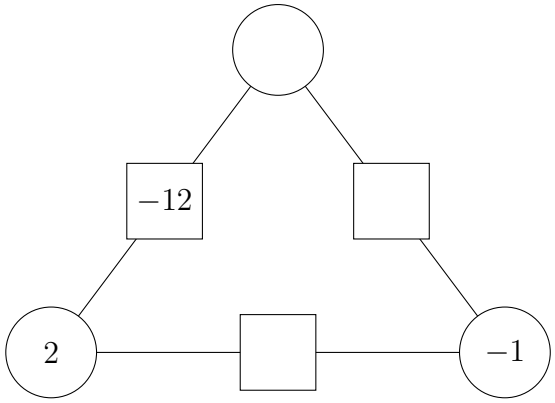
6. Write factor lists for:

   (a) 96

7. The two bricks below add to the brick above. Fill in the missing bricks:



8. The numbers in the circles **multiply** to give the number in the squares between them. Fill in the missing spaces:



9. (Difficult)Calculate the following

   (a) $4^2 \times \sqrt{25} =$ (c) $2 \times (1 + -5)^2 =$ (e) $-6^2 =$

   (b) $-30 \div -5 \times (5-3)^2 =$ (d) $(2^3 + 1) \times \sqrt[3]{125} =$ (f) $(-6)^2 =$

10. Write the following Decimals as Fractions

    (a) 0.88 (b) 0.06 (c) $0.\dot{1}$ (d) $0.\dot{7}$

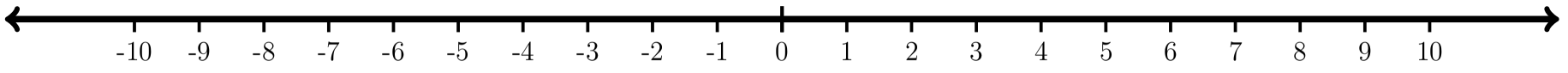
11. Write the following as fractions:

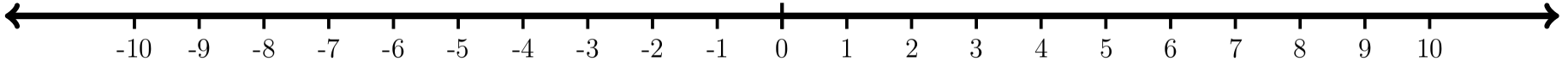
    (a) 6^{-3} (b) 6^3 (c) $\left(\frac{1}{2}\right)^3$ (d) $\left(\frac{1}{2}\right)^{-3}$

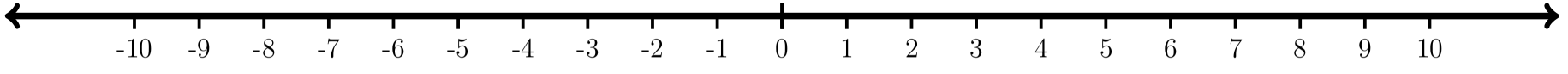
12. Simplify:

    (a) $\sqrt{18} \times \sqrt{2}$ (b) $\sqrt{10} \times \sqrt{10}$

13. Square numbers are made by multiplying the a number with itself. For example 9 is a square number because $3 \times 3 = 9$.
    Starting with $1 \times 1 = 1$, write out the first 10 square numbers.

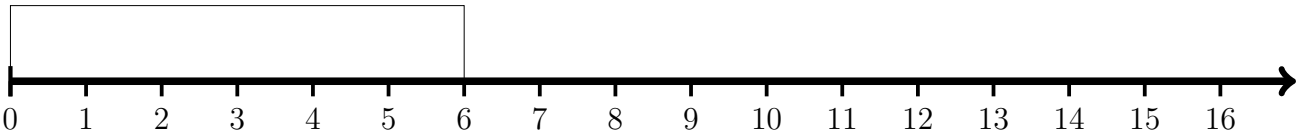

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10


-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10


-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

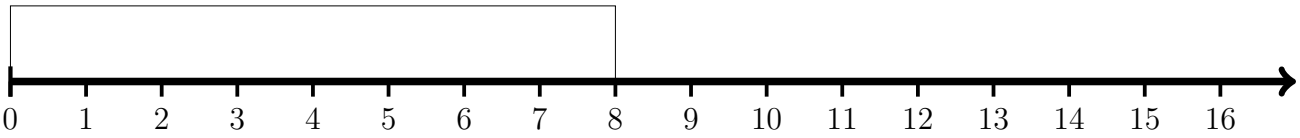
With the number given, use the number line to divide it up into **equal** parts
Then write a multiplication to go with it.

Number is: 6



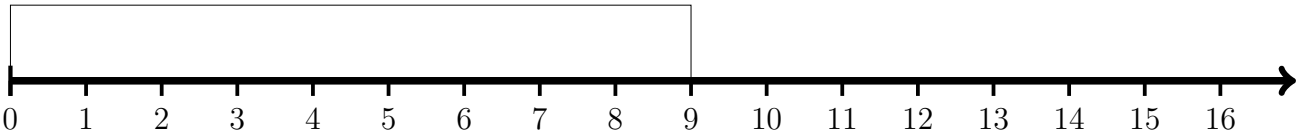
Multiplication is : ___ × ___ = 6

Number is: 8



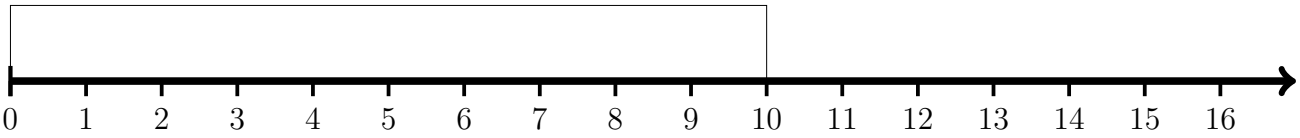
Multiplication is : ___ × ___ = 8

Number is: 9



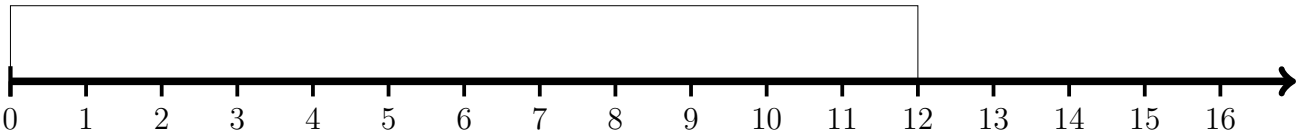
Multiplication is : ___ × ___ = 8

Number is: 10



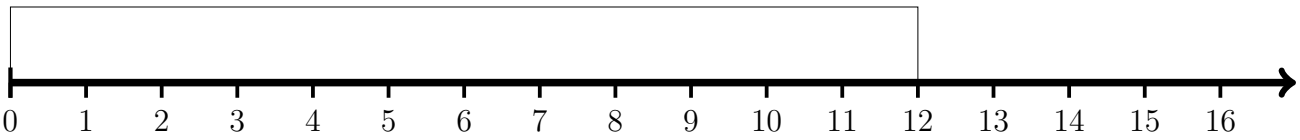
Multiplication is : ___ × ___ = 10

Number is: 12



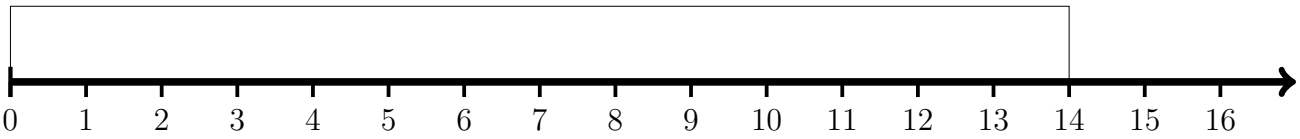
Multiplication is : ___ × ___ = 12

Number is: 12 (chose a different way of dividing up)



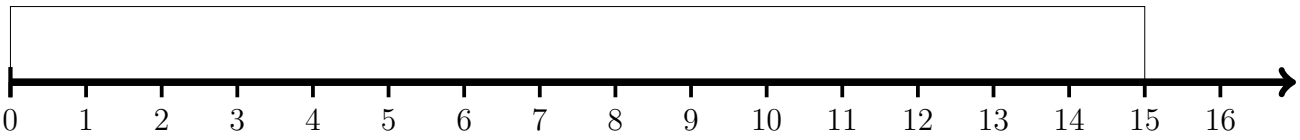
Multiplication is : ___ × ___ = 12

Number is: 14



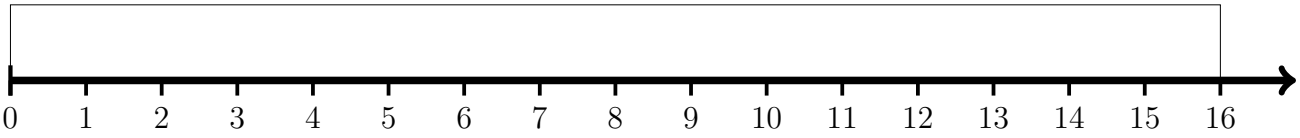
Multiplication is : ___ × ___ = 14

Number is: 15



Multiplication is : ___ × ___ = 15

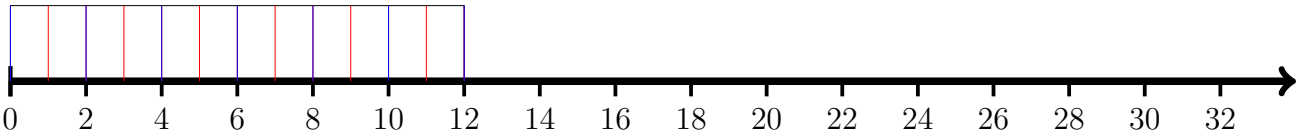
Number is: 16



Multiplication is : ___ × ___ = 16

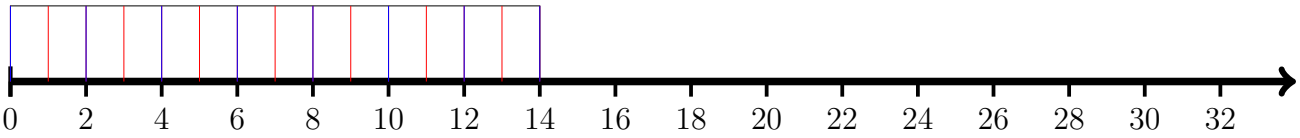
With the number given, use the number line to divide it up into **equal** parts
Then write a multiplication to go with it.

Number is: 12



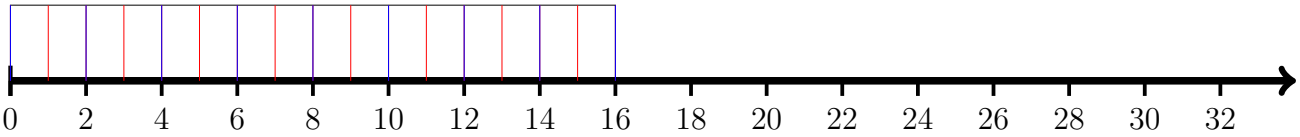
Multiplication is : ___ × ___ = 12

Number is: 14



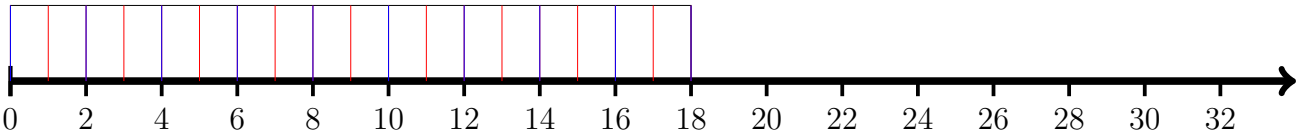
Multiplication is : ___ × ___ = 14

Number is: 16



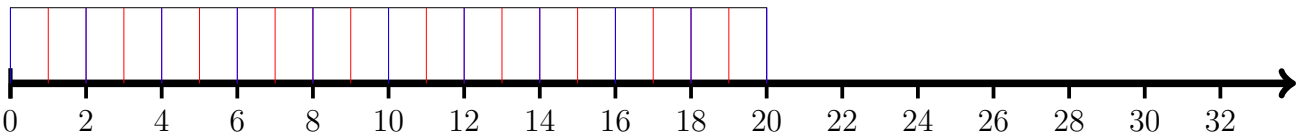
Multiplication is : ___ × ___ = 16

Number is: 18



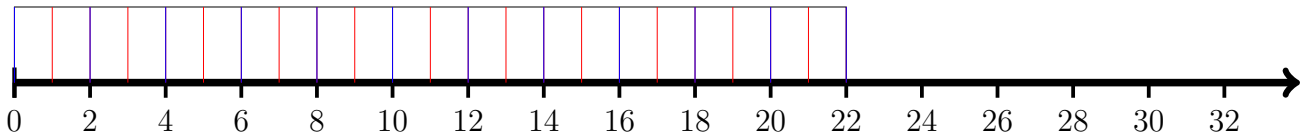
Multiplication is : ___ × ___ = 18

Number is: 20



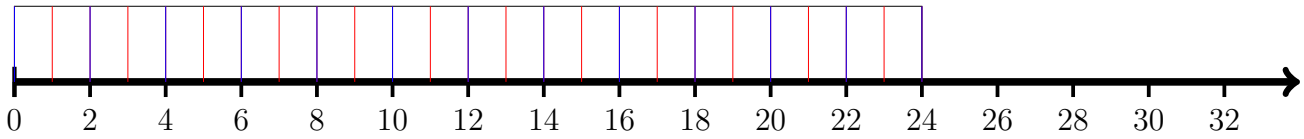
Multiplication is : ___ × ___ = 20

Number is: 22



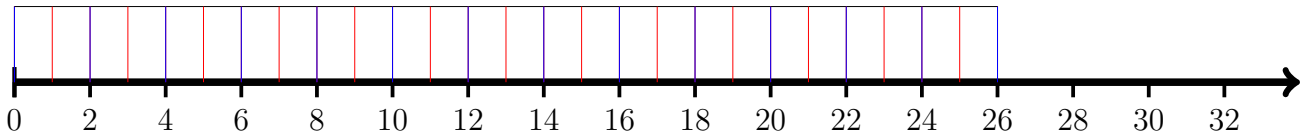
Multiplication is : ___ × ___ = 22

Number is: 24



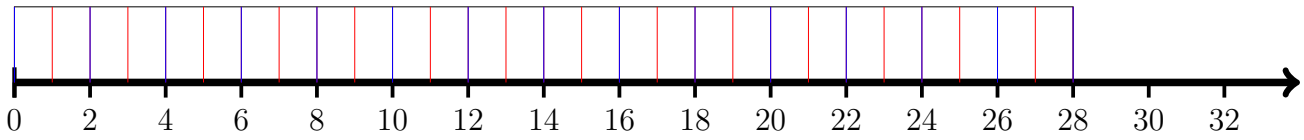
Multiplication is : ___ × ___ = 24

Number is: 26



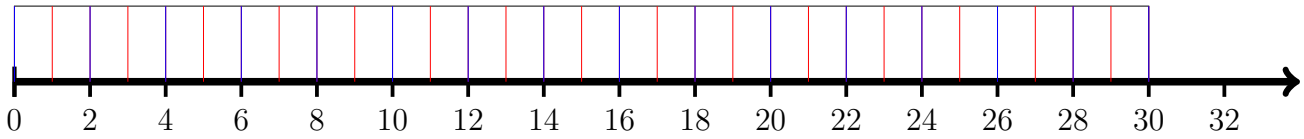
Multiplication is : ___ × ___ = 26

Number is: 28



Multiplication is : ___ × ___ = 28

Number is: 30



Multiplication is : ___ × ___ = 30

Work out (use number grid or steps):

1. (a) $2 \times 2 =$
   (b) $2 \times 2 \times 2 =$
   (c) $2 \times 2 \times 2 \times 2 =$
   (d) $(2 \times 2 \times 2) \times (2 \times 2) =$
   (e) $(2 \times 2 \times 2) \times (2 \times 2 \times 2) =$
2. (a) $3 \times 3 =$
   (b) $3 \times 3 \times 3 =$
   (c) $(3 \times 3) \times (3 \times 3) =$
3. (a) $4 \times 4 =$
4. (a) $6 \times 6 =$
5. (a) $7 \times 7 =$

1. (a) $10 + 10 =$
   (b) $10 + 10 + 10 =$
   (c) $10 + 10 + 10 + 10 =$
2. (a) $4 \times 10 =$
   (b) $5 \times 10 =$
   (c) $6 \times 10 + 5 =$
3. (a) $2 \times 15 = 2 \times 10 + 2 \times 5 =$
4. (a) $3 \times 15 = 3 \times 10 + 3 \times 5 =$
5. (a) $4 \times 15 = 4 \times 10 + 4 \times 5 =$