



1. Which of the following numbers are divisible by 5?

Select the **three** correct options.

- [-A-] 16
- [-B-] 10
- [-C-] 132
- [-D-] 205
- [-E-] 453
- [-F-] 425

2. Which of the following numbers are divisible by 3?

Select the **three** correct options.

- [-A-] 27
- [-B-] 84
- [-C-] 136
- [-D-] 240
- [-E-] 343
- [-F-] 550

3. Which of the following is the value of

$$-\sqrt{36} ?$$

- [-A-] -8
- [-B-] -6
- [-C-] 6
- [-D-] 8
- [-E-] -36

4. Which of the following is the prime factorization of 600?

- [-A-] $2^3 \times 3 \times 5^2$
- [-B-] $2^2 \times 5^2 \times 6$
- [-C-] $3 \times 5^2 \times 8$
- [-D-] $2^3 \times 5 \times 15$
- [-E-] $2^3 \times 3^2 \times 5^2$

5. Which of the following is the largest number?

- [-A-] 1.8×10^{-4}
- [-B-] 9.5×10^{-6}
- [-C-] 4.7×10^{-5}
- [-D-] 2.3×10^{-4}
- [-E-] 6.4×10^{-6}



6. Which of the following is true?

Select **all** that apply.

[-A-] $\frac{1}{7^{-2}} = -\frac{2}{7}$

[-B-] $\frac{1}{7^{-2}} = 49$

[-C-] $\frac{1}{2^{-5}} = 32$

[-D-] $\frac{1}{2^{-5}} = \frac{2}{-5} = -0.4$

[-E-] $\frac{1}{2^{-5}} = \frac{-5}{2} = -2.5$

7. Solve: $8x = \frac{18}{25}$.

[-A-] $x = \frac{9}{100}$

[-B-] $x = \frac{96}{25}$

[-C-] $x = \frac{3}{5}$

[-D-] $x = \frac{3}{50}$

[-E-] $x = \frac{3}{25}$

8. What is the solution of the equation $3.5p = 28$?

[-A-] $p = 8$

[-B-] $p = 24.5$

[-C-] $p = 31.5$

[-D-] $p = 98$

[-E-] $p = 0.125$

9. Which of the following is equal to $\left(\frac{5}{4}\right)^{-10}$?

[-A-] $\frac{5^{10}}{4^{10}}$

[-B-] $5^{10} \times 4^{10}$

[-C-] $\frac{1}{5^{10} \times 4^{10}}$

[-D-] $5^{10} \times 4^{-10}$

[-E-] $\frac{4^{10}}{5^{10}}$

**GENERAL QUESTIONS**

10. What is the least common multiple of 9 and 12?

11. If $2\frac{1}{3} \times 1\frac{4}{5} = 4\frac{1}{k}$, what is the value of k ?

12. What is the digit in the hundredths place in the decimal 109.452?

13. What is the digit in the thousandths place in the decimal 1,074.624?

14. The solution of the equation $x - \frac{2}{5} = \frac{1}{2} + \frac{k-1}{k}$ is $\frac{k-1}{k}$.
What is the value of k ?

15. Solve $x + 12 = 32$.
What is the value of x ?

16. The solution of the equation $\frac{2}{3} = x + \frac{1}{2} + \frac{1}{k}$ is $\frac{1}{k}$.
What is the value of k ?



17. The solution of the equation $24x = -18$ is $\frac{1-k}{k}$.
What is the value of k ?
-

18. Highlight all the prime numbers below.

1 2 3 21 32 43

Highlight Yellow

19. Highlight all the multiples of 9 below.

0 3 9 15 18 27

Highlight Yellow

20. There are 9 shelves in Renate's bookcase with the same number of books on each shelf. Seven books did not fit into the bookcase and are lying on the table. The total number of Renate's books in the bookcase and on the table is 142. Denote the number of books on each shelf by q .

Fill in the blanks with the correct numbers to obtain an equation whose solution is the number of books on each shelf.

_____ $\times q$ + _____ = _____



21. Fill in the blank.

If $\frac{x}{5} = 7$ then $x =$ _____

22. Check the proper solution of each equation in the table below.

	$m = 5$ is a solution.	$m = -5$ is a solution.
$3m + 16 = 1$		
$4m + 29 = 9$		
$m - 5 = 0$		
$6m - 7 = 23$		

23. Highlight value(s) of $\sqrt[3]{-64}$.

4 -4 8 -8 192

Highlight Yellow

24. Highlight value(s) of $\sqrt{81}$.

3 -3 9 -9 81

Highlight Yellow

25. A clothing factory sews T-shirts. 4 buttons are used for each T-shirt. A total of 115 T-shirts were sewed on a single day. Let t stand for the total number of buttons used on that day.

Part A

Which of the following equations can be used to determine the value of t ?

[-A-] $t \div 4 = 115$

[-B-] $t = 115 \div 4$

[-C-] $4t = 115$

[-D-] $115 \div t = 4$

[-E-] $115t = 4$



Part B

What is the number of buttons used that day?

- [-A-] 111
- [-B-] 28
- [-C-] 460
- [-D-] 500
- [-E-] 440

26. What value of x makes the equation true in each of the following cases?

a. $\frac{7}{9} = x + \frac{11}{18}$

- [-A-] $\frac{1}{6}$
- [-B-] $\frac{1}{9}$
- [-C-] $\frac{5}{6}$
- [-D-] $\frac{1}{3}$
- [-E-] $\frac{1}{2}$

b. $-\frac{7}{10} = x - \frac{11}{20}$

- [-A-] $-\frac{3}{20}$
- [-B-] $\frac{3}{10}$
- [-C-] $-\frac{7}{10}$
- [-D-] $\frac{1}{3}$
- [-E-] $\frac{1}{4}$



27. $\frac{1}{4} + \frac{3}{8} =$

Default Answer:

$$\frac{\square}{\square}$$

28. $\frac{3}{4} - \frac{2}{5} =$

Default Answer:

$$\frac{\square}{\square}$$

29. $63.8 - 7.4 =$

30. $15.27 + 9.48 =$

31. What value of q makes the equation true in each of the following cases?

a . $q + 6.5 = -3.2$

b . $q - 7.2 = 1.5$

32. What is the value of 7^{-2} ?

$$\frac{\square}{\square}$$



33. $(-5)^3 =$

34. Simplify.

$$5^2 \times 5^7 = 5^{\square}$$

35. Fill in the blank.

$$9^{\square} \times 9^{-6} = 9^{-21}$$

36. Fill in the blank.

$$(6^{-7})^4 = 6^{\square}$$

37. Which of the following systems of linear equations has $(-2, 7)$ as a solution?

Select all that apply.

[-A-]
$$\begin{cases} y = -2x + 3 \\ -y = 5 + 6x \end{cases}$$

[-B-]
$$\begin{cases} y - 5x = 17 \\ y + \frac{1}{2}x = 6 \end{cases}$$

[-C-]
$$\begin{cases} y - 4x = 16 \\ 2y + 5x = -4 \end{cases}$$

38. Which ordered pair is a solution of the inequality $-6x - y < 4$?

Select the two correct options.

[-A-] $(2, 3)$

[-B-] $(-6, 0)$

[-C-] $(3, 0)$

[-D-] $(1, -11)$

[-E-] $(0, -7)$



39. Which of the following is true about lines l and m defined below?

$$l: 3x + y = 21$$

$$m: x - 3y = 7$$

- [-A-] They are parallel.
- [-B-] They are coincident.
- [-C-] They are perpendicular.



Answer Key:

Question	Answer
1	B,D,F
2	A,B,D
3	B
4	A
5	D
6	B,C
7	A
8	A
9	E
10	36
11	5
12	5
13	4
14	10
15	20
16	6
17	4
18	2,3,43
19	0,9,18,27
20	$9q+7=142$
21	35
22	—
23	-4
24	9
25	Part A :A Part B : C
26	a) A b) A
27	5/8
28	7/20
29	56.4
30	24.75
31	a)-9.7 b)8.7
32	1/49
33	-125
34	9
35	-15
36	-28
37	A,B
38	A,C
39	C

	$m = 5$ is a solution.	$m = -5$ is a solution.
$3m + 16 = 1$	X	√
$4m + 29 = 9$	X	√
$m - 5 = 0$	√	X
$6m - 7 = 23$	√	X



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