



Are you ready for Beast Academy 5D?



Before beginning Beast Academy 5D, a student should be able to compute fluently with fractions, decimals, and negative numbers.

The student should also have a good understanding of prime factorization.

A student ready for Beast Academy 5D should be able to answer at least 13 of the 18 problems below correctly.

Step 1. The student should try to answer every question without a calculator and without help.

Step 2. Check the student's answers using the solutions at the end of this document.

Step 3. The student should be given a second chance on problems that he or she answered incorrectly.

Convert each fraction below into a decimal.

1. $\frac{3}{10} = \underline{\hspace{2cm}}$

2. $\frac{5}{8} = \underline{\hspace{2cm}}$

3. $\frac{4}{15} = \underline{\hspace{2cm}}$

Write each product below as a mixed number in simplest form.

4. $0.85 \cdot 10 = \underline{\hspace{2cm}}$

5. $\frac{7}{12} \cdot 90 = \underline{\hspace{2cm}}$

6. $\frac{70}{3} \cdot 0.1 = \underline{\hspace{2cm}}$

Solve for each variable below. Write fractional answers in simplest form.

7. $\frac{3}{5} = \frac{15}{a}$ $a = \underline{\hspace{2cm}}$

8. $\frac{c}{10} = \frac{3}{4}$ $c = \underline{\hspace{2cm}}$

9. $2x + 6 = x$ $x = \underline{\hspace{2cm}}$

10. $\frac{z+1}{10} + 6 = 3$ $z = \underline{\hspace{2cm}}$

11. Three more than five times n is 7. What is n ?

11. $n = \underline{\hspace{2cm}}$



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Fill the blanks to complete each arithmetic sequence below. Write any terms that are not whole numbers as mixed numbers.

12. 39, _____, _____, 53, _____, _____, 67, ...

13. 50, _____, 12, _____, _____, _____, -64, ...

Answer each of the questions below.

14. Fill in the blank below to make a true equation.

$$12 \cdot 14 \cdot 21 \cdot 2 = \boxed{}^2$$

15. What is the smallest positive integer that can be multiplied by 0.4 to get an integer result? 15. _____

16. If we multiply all the terms in sequence below, will the result be positive or negative? 16. _____

$$1, -2, 3, -4, \dots, 29, -30, 31.$$

17. What is the power of 5 in the prime factorization of the number represented by the product below? 17. _____

$$5 \cdot 10 \cdot 15 \cdot \dots \cdot 90 \cdot 95 \cdot 100$$

18. The ratio of Edgar's age to Frank's age is 3:6. The sum of their ages is 36. How many years old is Edgar? 18. _____