

1. Simplify each of the following expressions.

(a) $(-3ab)^2 (-2a^2b)^3 =$

(b) $\frac{-2x^3y^2 (-2x^3y)^2}{(-2y^2)^2} =$

2. Find $\frac{3}{7}$ of 42.

3. Write $\frac{5}{8}$ with denominator 40.

4. Reduce $\frac{100}{120}$ to lowest terms.

5. Express 20% as a reduced fraction.

6. Express $\frac{7}{20}$ as a percent.

7. Re-write $4\frac{3}{5}$ as an improper fraction.

8. Re-write $\frac{30}{7}$ as a mixed number.

9. Which fraction is larger, $\frac{5}{8}$ or $\frac{6}{11}$?

10. $\frac{3}{5} - \frac{7}{20} =$

11. $\frac{2}{7} \left(2\frac{1}{10} \right) =$

12. Division with fractions.

(a) Perform the division $10 \div \frac{1}{4} =$

- (b) How many quarters are there in a \$ 10 roll of quarters?

13. $\frac{3}{8} \div \frac{5}{6} =$

14. $\frac{1}{2 - \frac{2}{5}} =$

15. $2 - \frac{3}{8} \left(5\frac{1}{3} \right) =$

16. Evaluate $\frac{\frac{1}{a} + \frac{1}{b}}{\frac{1}{a} - \frac{1}{b}}$ if $a = 2$ and $b = 3$.

17. Evaluate $\frac{5x + x^2 + 6}{x + 2}$ if $x = \frac{2}{3}$.

18. We placed \$ 6000 in a bank account, with a 7% annual interest rate. How much money do we have in the account after one year?

19. A living room furniture is priced at \$ 800. What would we have to pay for it if it went on a 15% sale?

20. Solve each of the following equations. Make sure to check your solutions.

(a) $x - \frac{2}{5} = \frac{7}{20}$

(b) $\frac{3}{5}x = \frac{3}{10}$

(c) $x \div \frac{2}{3} = 6$

21. Consider the straight lines $y = 2x - 5$ and $y = -x + 4$.

(a) Graph these lines in the same coordinate system. Use your graph to find the coordinates of the point where the lines intersect.

(b) Use algebraic methods to check your answer.