

1. a) Factorize 1540 into primes.
- b) Find the least common multiple of 78 and 65.
- c) Find the greatest common divisor of 66 and 55.
- d) Write 255% as a fraction.
- e) $(4^3 \div 2 - 7) \div 5 =$

2. a) $17a^3x^2 \cdot 2a \div 10ax^2 =$

b)

$$\frac{-111 + 5^3}{44 - 3^2} =$$

c) Solve for x: $2x - 15 = -5x + 1$

d) Write $\frac{5}{9}$ as a decimal.

3. a) $58.76 \div 0.52 =$

b) Solve for x: $7x \geq 10x - 27$

c) Find two consecutive odd integers so that 3 times the first integer is 21 less than 4 times the second.

4. a) Solve for x: $242x^2 - 32 = 0$

b) Solve for x: $15x^2 - 23x + 6 = 0$

c) Solve for x:

$$\frac{2}{x+3} = 3 - \frac{28x+41}{x^2+8x+15}$$

5. a) Simplify:

$$\frac{x+2}{x^2-12x+35} \cdot \frac{3x-15}{3x^2+5x-2}$$

b) Simplify:

$$\frac{1 + \frac{1}{x}}{1 - \frac{1}{x-1}}$$

c) $(3x^3 + 5x^2 - 7) \div (x + 3) =$

6. a) Graph: $y = -2x + 5/2$.

- b) Rewrite in slope-intercept form and graph $-3x + 2y = 8$.
c) Are the lines $2y - x = 8$ and $-y - 2x = -20$ parallel, perpendicular, or neither?

7. a) Simplify $\sqrt[3]{16x^4}$.

b) Solve for x:

$$\sqrt{9(2x + 3)} + (2x + 3)^{1/2} = 8$$

c) Solve for x using the quadratic equation: $3x^2 - 7x - 2 = 0$.