

1. Simplify $\frac{a^2 + 6a + 9}{a^2 - 5a - 24}$.

a) $\frac{a + 3}{a - 8}$

b) $\frac{a + 3}{a - 3}$

c) $a + 3$

d) 1

e) $\frac{1}{a - 8}$

2. Simplify $\frac{nr - 12 - 4n + 3r}{nr + 18 + 3r + 6n}$.

a) $\frac{-(r + 3)}{r + 4}$

b) $\frac{-(r + 4)}{r + 6}$

c) $\frac{r - 4}{r + 6}$

d) $\frac{r + 4}{r - 6}$

e) $\frac{n - r}{n + r}$

3. Simplify $\frac{7a^3b^3}{8a^2cb^2} \div \frac{56ca^2b^3}{88a^4}$.

a) $\frac{11a^3}{8c^2b^2}$

b) $\frac{8a^3}{11b^2}$

c) $\frac{11a^3}{cb^3}$

d) $\frac{11c^2a^2}{8b^3}$

e) $\frac{ca^2}{b}$

4. Simplify $\frac{9a^2 - 27a}{a^3 - 9a^2} \cdot \frac{a^2 - 18a + 81}{a^2 - 9}$.

a) $\frac{9}{a^2 + 3a}$

b) $\frac{9a - 81}{a^2 + 3a}$

c) $\frac{9a^2 + 81}{a^2 + 3a}$

d) $\frac{a - 9}{a^2 + 3a}$

e) $\frac{1}{a - 9}$

5. Subtract and simplify $\frac{7}{5n} - \frac{9}{3n^2}$.

a) $\frac{7n - 15}{5n^2}$

b) $\frac{7n + 15}{6n^2}$

c) $\frac{7n - 15}{5n}$

d) $\frac{7n - 45}{15n^2}$

e) $-\frac{2}{n^2}$

6. Subtract and simplify $\frac{2x}{x - 4} - 1$.

a) 1

b) $\frac{x - 4}{x + 4}$

c) $\frac{3x + 4}{x - 4}$

d) $\frac{2x - 1}{x - 4}$

e) $\frac{x + 4}{x - 4}$

7. Simplify $\frac{3}{x} - \frac{2x + 8}{x^2 + 3x} + \frac{x}{x + 3}$.

a) $\frac{x^2 + x + 1}{x(x + 3)}$

b) $\frac{x^2 + x - 1}{x(x + 3)}$

c) $\frac{x^2 - x + 1}{x(x + 3)}$

d) $\frac{3 + x}{x^2 + 3}$

e) $\frac{-x - 5}{x^2 + 6}$

8. Simplify

$$\frac{-\frac{5}{x} - \frac{10}{x+5}}{\frac{3}{x^2+5x} + \frac{3}{x}}$$

a) $-\frac{5(3x + 5)}{3(x + 6)}$

b) $-\frac{5(3x - 5)}{3(x + 6)}$

c) $-\frac{3(3x - 5)}{5(x + 6)}$

d) $\frac{5}{x(x + 5)}$

e) $\frac{15}{x(x + 5)}$

9. Solve the equation $\frac{2x-5}{4} = \frac{3}{x}$.

a) $\left\{\frac{3}{2}, -4\right\}$

b) $\left\{-\frac{5}{2}, -4\right\}$

c) $\left\{\frac{5}{2}, 4\right\}$

d) $\left\{-\frac{3}{2}, 4\right\}$

e) $\{3, 4\}$

10. A 63-foot board is to be cut into two pieces whose lengths are in the ratio of 2 to 7. Find the lengths of the two pieces.

a) 12 feet and 51 feet

b) 15 feet and 48 feet

c) 14 feet and 49 feet

d) 17 feet and 46 feet

e) 10 feet and 53 feet

11. Solve the equation $\frac{x}{x-8} - \frac{7}{x+10} = \frac{164}{x^2+2x-80}$.

a) $\{-12, 9\}$

b) $\{-9, 12\}$

c) $\{9, 12\}$

d) $\{-10, 8\}$

e) $\{-7, 164\}$

12. Solve $-\frac{2}{x-4} = \frac{3}{y-1}$ for the variable y .

a) $y = \frac{3}{2}x + 7$

b) $y = \frac{2}{3}x - 7$

c) $y = -\frac{3}{2}x + 7$

d) $y = -2x + 3$

e) $y = x - 4$

13. It takes Amy twice as long to deliver papers as it does Nancy. How long, in minutes, would it take each girl to deliver the papers by herself if they can deliver the papers together in 20 minutes?

a) 40 minutes for Nancy and 20 minutes for Amy

b) 20 minutes for Nancy and 40 minutes for Amy

c) 30 minutes for Nancy and 60 minutes for Amy

d) 10 minutes for Nancy and 20 minutes for Amy

e) 25 minutes for Nancy and 50 minutes for Amy

14. Simplify $(3^{-3} + 5^{-2})^{-1}$.

a) $\frac{675}{52}$

b) $\frac{52}{675}$

c) $\frac{34}{675}$

d) $\frac{1}{8}$

e) 8

15. Simplify $\frac{30x^{-1}y^{-6}}{6x^{-3}y^{-3}}$.

a) $5x^2y^3$

b) $\frac{y^3}{5x^2}$

c) $\frac{5x^2}{y^3}$

d) $\frac{y^3}{5x^2}$

e) $\frac{30x}{y}$

16. Evaluate $\sqrt[3]{\frac{27}{64}}$.

a) $\frac{4}{5}$

b) $\frac{1}{37}$

c) $\frac{3}{4}$

d) $\frac{3}{5}$

e) $\frac{5}{3}$

17. Simplify $-\frac{3}{16}\sqrt{12}$.

a) $-\frac{3\sqrt{3}}{8}$

b) $-3\sqrt{3}$

c) $3\sqrt{3}$

d) $-\frac{\sqrt{3}}{8}$

e) $-\frac{9}{4}$

18. Simplify $\frac{\sqrt{20}}{\sqrt{6}}$.

a) $\frac{\sqrt{30}}{3}$

b) $\frac{\sqrt{30}}{6}$

c) $\sqrt{\frac{6}{20}}$

d) $3\sqrt{30}$

e) $\frac{\sqrt{10}}{3}$

19. Simplify $7\sqrt{125} - 3\sqrt{5} - 2\sqrt{125}$.

a) $20\sqrt{5}$

b) $17\sqrt{5}$

c) $22\sqrt{5}$

d) $29\sqrt{5}$

e) $2\sqrt{25}$

20. Simplify $7\sqrt{18x} + 8\sqrt{32x} - 2\sqrt{50x}$.

a) $2\sqrt{43x}$

b) $43\sqrt{x}$

c) $2\sqrt{x}$

d) $43\sqrt{2x}$

e) $13\sqrt{2x}$

02/23/07

MATH 021

1 - EX1

ITEM NO.	FORM:	A
1		A
2		C
3		A
4		B
5		A
6		E
7		A
8		A
9		D
10		C
11		A
12		C
13		C
14		A
15		C
16		C
17		A
18		A
19		C
20		D