

1. Simplify  $\frac{p^2 - 2p - 24}{6 - p}$
- $-(p + 4)$
  - $p - 4$
  - $4 - p$
  - $\frac{p + 4}{6 - p}$
2. Simplify  $\frac{xy - yw + xz - zw}{xy + yw + xz + zw}$
- 1
  - 1
  - $\frac{x - w}{x + w}$
  - $\frac{y - z}{y + z}$
3. Simplify  $\frac{6x^3 - x^2 - x}{2x^2 + x - 1} \cdot \frac{x^2 - 1}{x^3 - 2x^2 + x}$
- $\frac{3x + 1}{x - 1}$
  - $\frac{(3x - 1)(x + 1)}{(x - 1)^2}$
  - $3x + 1$
  - $\frac{3x - 1}{2x + 1}$
4. Simplify  $\frac{a^2 - b^4}{a^2 + 2ab^2 + b^4} \div \frac{3a - 3b^2}{a^2 + 3ab^2 + 2b^4}$
- $\frac{a + b}{3}$
  - $\frac{3}{a + 2b^2}$
  - $\frac{3(a - b^2)^2}{(a + b^2)^2(a + 2b^2)}$
  - $\frac{a + 2b^2}{3}$
5. Simplify  $7 - \frac{b + 1}{b - 1}$
- 6
  - $\frac{6b}{b - 1}$
  - $\frac{2(3b - 1)}{b - 1}$
  - $\frac{6b - 8}{b - 1}$
6. Simplify  $\frac{5}{4a^2} + \frac{3}{14ab^3}$
- $\frac{70ab^3 + 6a}{56a^3b^3}$
  - $\frac{70ab^3 + 12a^2}{56a^2b^3}$
  - $\frac{20b^3 + 12a}{28a^3b^3}$
  - $\frac{35b^3 + 6a}{28a^2b^3}$
7. Add  $1 + \frac{1}{1 + \frac{1}{n}}$
- $\frac{2n}{n + 1}$
  - $\frac{2n + 1}{n}$
  - $\frac{2n + 1}{n + 1}$
  - 2
8. Simplify  $\frac{\frac{5}{x} + \frac{6}{x-5}}{\frac{3}{x} + \frac{2}{x-5}}$
- $\frac{11x - 25}{5(x - 3)}$
  - $\frac{x - 25}{5(x - 3)}$
  - $\frac{11x}{5(x - 5)}$
  - $\frac{x}{5(x - 5)}$
9. Solve for  $w$ .
- $$\frac{1}{w - 3} + \frac{1}{w + 3} = \frac{-5}{w^2 - 9}$$
- $-\frac{1}{2}$
  - 5
  - $-\frac{5}{2}$
  - All real numbers
10. Solve for  $x$ .
- $$x - \frac{4}{3x} = -\frac{1}{3}$$
- 1 only
  - 1 only
  - $-\frac{4}{3}$  and 1
  - $\frac{3}{4}$  and 1

11. Solve for  $y$ .

$$\frac{1}{y} = \frac{1}{x} + \frac{1}{w}$$

- a)  $y = x + w$   
 b)  $y = \frac{xw}{x + w}$   
 c)  $y = \frac{w + x}{xw}$   
 d)  $y = xw$

12. Fred can plant a flower design by himself in 3 hours. It takes Carlos 7 hours working by himself to make the same design. How long would it take them to make the design working together?

- a) 4.5 hours  
 b)  $\frac{10}{21}$  hour  
 c) 1.5 hour  
 d) 2.1 hours

13. 2 sail boats start at the same time and same point, heading to the same restaurant on the lake. The Waterlog sails an average 6 miles per hour and the Sinksfast sails an average of 4 miles per hour. If the Waterlog arrives at the restaurant 0.4 hour ahead of Sinksfast, find the distance from their starting point to the restaurant.

- a) 0.5 mi  
 b) 1 mi  
 c) ~~4~~ 8 mi  
 d) 1.2 mi

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

- a)  $\frac{49}{144}$   
 b) 1  
 c) 49  
 d)  $\frac{144}{49}$

15. Simplify  $\left(\frac{-3x^3y^{-2}}{x^{-1}y^5}\right)^{-3}$ 

- a)  $\frac{27y^{21}}{x^{12}}$   
 b)  $\frac{9y^{21}}{x^{12}}$   
 c)  $\frac{9x^4}{y^7}$   
 d)  $\frac{-y^{21}}{27x^{12}}$

16. Simplify  $\frac{3\sqrt{3}}{\sqrt{6}}$ 

- a)  $6\sqrt{2}$   
 b)  $3\sqrt{3}$   
 c)  $\frac{3\sqrt{2}}{2}$   
 d)  $\frac{3\sqrt{3}}{2}$

17. Simplify  $\frac{2}{\sqrt[3]{4}}$ 

- a)  $\sqrt[3]{4}$   
 b)  $2\sqrt[3]{4}$   
 c)  $\sqrt[3]{2}$   
 d)  $2\sqrt[3]{2}$

18. Simplify  $\frac{\sqrt{48x^6y^9}}{\sqrt{6x^2y^6}}$ 

- a)  $2x^2y\sqrt{2y}$   
 b)  $3x^2y\sqrt{y}$   
 c)  $8x^2y\sqrt{y}$   
 d)  $4x^2y\sqrt{2y}$

19. Simplify  $\frac{3\sqrt{20}}{2} - \frac{5\sqrt{80}}{4}$ 

- a)  $-2\sqrt{5}$   
 b)  $\sqrt{5}$   
 c)  $\frac{3\sqrt{5}}{8}$   
 d)  $\frac{\sqrt{5}}{4}$

20. Simplify  $5\sqrt{3a} - 7\sqrt{12a} + 2\sqrt{75a}$ 

- a)  $27\sqrt{3a}$   
 b)  $\sqrt{3a}$   
 c) 0  
 d)  $-\sqrt{3a}$

EX I - FORM A

MATH 21 - FA07

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