

ANSWERS

1a _____

1b _____

2a _____

2b _____

3a _____

3b _____

4a _____

4b _____

5a _____

5b _____

6a _____

6b _____

Simplify the followings

$$1. a) \left(\frac{m}{n^2 - mn} + \frac{n}{m^2 - mn} \right) \times \frac{mn}{n - m}$$

$$b) \left(\frac{ab}{a^2 - b^2} + \frac{b}{2a - 2b} \right) \times \frac{a^2 - b^2}{2b}$$

$$2. a) \frac{x + y}{y} \div \frac{x^2 + 2xy + y^2}{xy^2}$$

$$b) \frac{a^2b}{a^2 - 2ab + b^2} \times \frac{a - b}{a}$$

$$3. a) 3a(2a - 1) - 2a(4a + 3)$$

$$b) (a^2 - a) \times \left(\frac{2}{a^2 - 1} + \frac{1}{a + 1} \right)$$

$$4. a) \left(\frac{6}{y^2 - 9} + \frac{1}{3 - y} \right) \times \frac{y^2 + 6y + 9}{5}$$

$$b) \left(\frac{2}{x^2 - 4} + \frac{1}{2x - x^2} \right) \div \frac{1}{x^2 + 4x + 4}$$

$$5. a) \frac{a^2 + 3a}{a + 4} \times \frac{a + 1}{a - 3} \div \frac{a^2 + a}{16 - a^2}$$

$$b) \frac{(a + b)^2 - 4}{b^2 - (b - 2)^2} \times \frac{3a - 3b + 6}{3a + 6 + 3b}$$

$$6. a) \frac{5}{3 - 2a} + \frac{3}{2a - 3} - \frac{a + 1}{2a^2 - a - 3}$$

$$b) \frac{a}{a - 1} + \frac{3}{a + 2} - \frac{2a - 5}{a^2 + a - 2}$$

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ANSWERS

7a

7b

8a

8b

9a

9b

10a

10b

11a

11b

12a
12b
13a
13b

7. a) $(y+10) \times (y-2) - 4y \times (2-3y)$

b) $(x-1) \times (x+3) - 2x \times (1-3x)$

8. a) $\frac{b}{a^2-ab} \div \frac{b^2}{a^2-b^2}$

b) $\frac{a^2}{a^2-25} \div \frac{a}{25+5a}$

9. a) $(x^{-1} + y^3)^2 - \frac{2y^3}{x}$

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

10. a) $\left(\frac{b}{a+b} - \frac{b-a}{b}\right) \div \frac{a}{b}$

b) $\frac{b}{a-b} \div \left(\frac{a}{a-b} - \frac{a+b}{a}\right)$

11. a) $\left(\frac{a}{a-b} - \frac{b}{a+b}\right) \times \frac{a-b}{b}$

b) $\left(\frac{a}{a-b} - \frac{a}{a+b}\right) \times \frac{a+b}{a}$

12. a) $\left(\frac{m+5}{m-5} - \frac{m}{m+5}\right) \times \frac{m+5}{3m+5}$

b) $\left(\frac{m+1}{m-1} - \frac{m}{m+1}\right) \div \frac{3m+1}{m^2+m}$

13. a) $\left(\frac{a-1}{a+1} + \frac{4a}{a^2-1}\right) \times \frac{1}{a+1}$

b) $\left(\frac{a+3}{a-3} - \frac{a}{a+3}\right) \div \frac{a+1}{a+3}$

A