

Ex: 11.17

Simplify the following fractions.

$$1a. \frac{a}{2} + \frac{b}{3} = \frac{3a+2b}{6}$$

$$c. \frac{p}{4} + \frac{q}{7} = \frac{7p+4q}{28}$$

$$d. \frac{2a}{5} + \frac{b}{3} = \frac{6a+5b}{15}$$

$$2. b. \frac{a}{3} - \frac{a}{5} = \frac{5a-3a}{15} = \frac{2a}{15}$$

$$c. \frac{p}{4} + \frac{p}{7} = \frac{7p+4p}{28} = \frac{11p}{28}$$

$$f. \frac{2x}{7} + \frac{2x}{5} = \frac{10x+14x}{35} = \frac{24x}{35}$$

$$3. a. \frac{3m}{5} - \frac{m}{2} = \frac{6m-5m}{10} = \frac{m}{10}$$

$$e. \frac{11x}{2} - \frac{5x}{3} = \frac{33x-10x}{6} = \frac{23x}{6}$$

$$f. \frac{4p}{3} - \frac{p}{2} = \frac{4p-3p}{6} = \frac{p}{6}$$

$$4a. \frac{p-p}{2} = \frac{2p-p}{2} - \frac{p}{2}$$

$$d. \frac{m-2m}{3} = \frac{3m-2m}{3} = \frac{m}{3}$$

$$f. \frac{w-3w}{4} = \frac{4w-3w}{4} - \frac{w}{4}$$

$$5. a. \frac{2m-m}{2} = \frac{4m-m}{2} - \frac{3m}{2}$$

$$d. \frac{4m-3m}{2} = \frac{8m-3m}{2} - 5m^2$$

$$f. \frac{6q-6q}{7} = \frac{42q-6q}{7} - 36q^7$$

$$6a. \frac{p-p}{2} = \frac{px-p}{2}$$

$$c. \frac{m+m}{n} = \frac{m+n}{n}$$

$$c. \frac{2x-x}{y} = \frac{2xy-x}{y}$$

$$f. \frac{2p-3p}{2} = \frac{2pq-3p}{2}$$

$$7a. \frac{a}{3} + \frac{a+4}{2} = 2a + 3(a+4)$$

$$= 2a + 3a + 12$$

$$= 5a + 12$$

$$b. \frac{2b}{5} + \frac{b-4}{3} = \frac{6b+5(b-4)}{15}$$

$$= \frac{6b+5b-20}{15}$$

$$= \frac{11b-20}{15}$$

$$c. \frac{c+2}{4} - \frac{2-c}{2}$$

$$= \frac{c+2-2(2-c)}{4}$$

$$= \frac{c+2-4+2c}{4}$$

$$= \frac{3c-2}{4}$$

OR

$$\frac{2(c+2)-4(2-c)}{8}$$

$$= \frac{-2c+4-8+4c}{8}$$

$$= \frac{6c-4}{8}$$

$$= \frac{2(3c-2)}{8}$$

$$= \frac{3c-2}{4}$$

$$d. \frac{2(d-3)}{7} - \frac{3(2-d)}{2}$$

$$= \frac{4(d-3)-21(2-d)}{14}$$

$$= \frac{-4d-12-42+21d}{14}$$

$$= \frac{-25d-54}{14}$$