

QUIZ Fractions and Equations
NO Calculator

1. Simplify: [3]

$$a) \frac{25}{15} = \frac{5 \times 5}{5 \times 3} = \frac{5}{3}$$

$$b) \frac{9}{27} = \frac{9}{9 \times 3} = \frac{1}{3}$$

$$c) \frac{42}{7} = \frac{6 \times 7}{7} = 6$$

2. Evaluate and simplify (keep improper fractions as your answers when relevant): [12]

$$a) \frac{3}{4} - \frac{7}{4} = -\frac{4}{4} = -1$$

$$b) \frac{2}{3} + \frac{5}{6} = \frac{4}{6} + \frac{5}{6} = \frac{9}{6} = \frac{3}{2}$$

$$c) \frac{1}{4} + \frac{2}{3} = \frac{3}{12} + \frac{8}{12} = \frac{11}{12}$$

$$d) 5 - \frac{3}{4} = \frac{20}{4} - \frac{3}{4} = \frac{17}{4}$$

$$e) 2\frac{1}{3} + 3\frac{1}{4} = \frac{7}{3} + \frac{13}{4} = \frac{28}{12} + \frac{39}{12} = \frac{67}{12}$$

$$f) \frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$$

$$g) 5 \times \frac{3}{4} = \frac{15}{4}$$

$$h) 2\frac{2}{3} \times 4\frac{1}{5} = \frac{8}{3} \times \frac{21}{5} = \frac{8 \times 3 \times 7}{3 \times 5} = \frac{56}{5}$$

$$i) \frac{12}{5} \times \frac{20}{9} = \frac{3 \times 4 \times 5 \times 4}{5 \times 3 \times 3} = \frac{16}{3}$$

$$j) \frac{\frac{2}{3}}{\frac{10}{9}} = \frac{2}{3} \times \frac{9}{10} = \frac{2 \times 3 \times 3}{3 \times 2 \times 5} = \frac{3}{5}$$

$$k) \frac{15}{\frac{25}{3}} = 15 \times \frac{3}{25} = \frac{5 \times 3 \times 3}{5 \times 5} = \frac{9}{5}$$

$$l) \frac{\frac{36}{7}}{27} = \frac{36}{7} \times \frac{1}{27} = \frac{9 \times 4}{7 \times 9 \times 3} = \frac{4}{21}$$

3. Solve the following Equations. Give exact values only:

[10]

a) $3x - 5 = 5x + 4$

$$-2x = 9$$

$$x = -\frac{9}{2}$$

b) $2(3x + 5) = 4x - 8$

$$6x + 10 = 4x - 8$$

$$2x = -18$$

$$x = -9$$

c) $\frac{3}{4}(x - 2) = 2x + 1$

$$\frac{3}{4}x - \frac{6}{4} = 2x + 1$$

$$3x - 6 = 8x + 4$$

$$-10 = 5x$$

$$x = -2$$

d) $\frac{2x-3}{4} = \frac{1}{3}(x-2)$

$$\frac{2x-3}{4} = \frac{1}{3}x - \frac{2}{3}$$

$$2x = 1$$

$$3(2x-3) = 4x-8$$

$$6x-9 = 4x-8$$

$$x = \frac{1}{2}$$

e) $\frac{2}{3}x + \frac{1}{4} = x - \frac{1}{6}$

$$\downarrow \times 3 \times 2 \times 2$$

$$8x + 3 = 12x - 2$$

$$5 = 4x$$

$$x = \frac{5}{4}$$