

1.

5

- a.) ✓  
 b.) ✓  
 c.) ✓  
 d.) ✓  
 e.) ✗

- f.) ✓  
 g.) ✗  
 h.) ✓  
 i.) ✓  
 j.) ✓

✗ 1/2

2.

8

a.)  $9 \cdot \frac{2}{3} = \underline{6}$  1

b.)  $\frac{12}{\frac{2}{3}} = 12 \cdot \frac{3}{2} = \underline{18}$  1

c.)  $(2 - \frac{2}{3})^2 = (\frac{4}{3})^2 = \underline{\frac{16}{9}}$  1

d.)  $4 \cdot \frac{2}{3} - (\frac{2}{3})^2 = \frac{8}{3} - \frac{4}{9} = \frac{24}{9} - \frac{4}{9} = \underline{\frac{20}{9}}$  1

e.)  $(2 \cdot \frac{2}{3} - 3)^2 = (\frac{4}{3} - 3)^2 = (-\frac{5}{3})^2 = \underline{\frac{25}{9}}$  1

f.)  $\sqrt{6 \cdot \frac{2}{3}} = \sqrt{4} = \underline{2}$  1

g.)  $\frac{2}{\frac{2}{3} + 3} = \frac{2}{\frac{10}{3}} = 2 \cdot \frac{3}{10} = \underline{\frac{6}{10}}$  1

h.)  $\frac{(\frac{2}{3})^2}{\frac{2}{3} - 2} = \frac{\frac{4}{9}}{-\frac{4}{3}} = \frac{4}{9} \cdot (-\frac{3}{4}) = \underline{-\frac{1}{3}}$  1

3.

4

a.)  $2 \cdot (-2) - \frac{3}{4} \cdot 1,5 = -4 - \frac{3}{4} \cdot \frac{3}{2} = -4 - \frac{9}{8} = \underline{-\frac{41}{8}}$  1

b.)  $\sqrt{\frac{3}{4} - \frac{-2 \cdot 1,5}{2}} = \sqrt{\frac{3}{4} + \frac{3}{2}} = \sqrt{\frac{3}{4} + \frac{6}{4}} = \sqrt{\frac{9}{4}} = \underline{\frac{3}{2}}$  1

c.)  $\frac{3}{4} : (-2) - 1,5 = \frac{3}{4} \cdot (-\frac{1}{2}) - \frac{3}{2} = -\frac{3}{8} - \frac{3}{2} = -\frac{3}{8} - \frac{12}{8} = \underline{-\frac{15}{8}}$  1

d.)  $(-2 - \frac{3}{4})(\frac{3}{4} - 1,5) = -\frac{11}{4} \cdot (\frac{3}{4} - \frac{3}{2}) = -\frac{11}{4} \cdot (\frac{3}{4} - \frac{6}{4}) = -\frac{11}{4} \cdot (-\frac{3}{4}) = \underline{\frac{33}{16}}$  1

4

$$\begin{aligned} \text{a.) } & \frac{1}{15} = \frac{16}{240} = \frac{32}{480} \\ & \frac{1}{16} = \frac{15}{240} = \frac{30}{480} \end{aligned} \left. \vphantom{\frac{1}{15}} \right\} \text{z.B. } \underline{\underline{\frac{31}{480}}} \quad \underline{\underline{2}}$$

$$\text{b.) } a^2 + b^2 = c^2$$

(4)

$$(2\sqrt{6})^2 + 5^2 = c^2$$

$$24 + 25 = c^2$$

$$49 = c^2$$

$$\underline{\underline{7}} = c$$

⇒ Hypotenuse: 7 cm . 2

5

$$x + 2 = \frac{10}{x} \quad | \cdot x$$

$$x^2 + 2x = 10 \quad | -10$$

$$x^2 + 2x - 10 = 0$$

(3)

$$(x+1)(x+1) = 11 \quad | \sqrt{\quad}$$

$$x+1 = \sqrt{11} \quad | -1$$

$$x = \underline{\underline{\sqrt{11}-1}} \quad \underline{\underline{3}}$$

24 Pkte