

Q10:

$$a: \sqrt{3} = 3^{\frac{1}{2}}$$

$$b: \sqrt{3\sqrt{3}} = (3 \cdot 3^{\frac{1}{2}})^{\frac{1}{2}}$$

$$c: \sqrt{3\sqrt{3}\sqrt{3}} = (3(3 \cdot 3^{\frac{1}{2}})^{\frac{1}{2}})^{\frac{1}{2}}$$

Q11: $a: x^2 - x - 6$

$$= x^2 + 2x - 3x - 6$$

$$= (x+2) \cdot (x-3)$$

$$b: x^2 - 4 = -3^2$$

$$(x-3)(x+3)$$

$$c: 2x^3 - 8x^2 + x - 4$$

$$2x(x^3 - 4x^2) = 2x^2 \cdot (x-4) + x-4$$

$$(x-4)(2x^2+1)(x+4)$$

Written home work #1

Q1: $\{-1.5, 0, \frac{5}{2}, \sqrt{4}, 2.71, -\pi, 3.14, 100, -8, 2+\sqrt{2}\}$

a: 100

b: $0, \sqrt{4}^{\uparrow 2}, 100, -8$

c: $-1.5, 0, \frac{5}{2}, \sqrt{4}, 2.71, 3.14, 100, -8$

d: $-\pi, 2+\sqrt{2}$
 \downarrow rational \downarrow irrational
 \downarrow irrational

Q2: $-(x-1)4$

\downarrow

$= 4 \cdot -(x-1)$

$= (-4)(x-1)$

$= 4 \cdot -(1-x)$

Q3:

a: $x-4$

e: $(x+1)(x+1)2x^2 + (2x-7)(2x-7)x^2$

b: $(2x)(x^3)$

f: $(x-2)[3x+1]^5(x-2)^6$

c: $12x^2 - 6x$

g: $(x-\frac{2}{3})^2 [x-6]^3 + (5x-1)^2$

d: $-3(x^2+1)$

h: $\sqrt{x} [x(-2) - 3(3x^3-2)^2]$
 $(x^2+1)^2$

Q4:

a: $\frac{1}{7} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{7} = \frac{2}{14} \rightarrow \frac{7}{14} = \frac{5}{14}$

b: $\frac{1}{12} + \frac{2}{15} = \frac{5}{60} + \frac{8}{60} = \frac{13}{60}$

c: $(3+\frac{1}{4})(1-\frac{4}{6}) = \frac{3 \cdot 4}{1 \cdot 4} + \frac{1}{4} = \frac{13}{4}$, $\frac{1}{1} - \frac{4}{6} = \frac{6}{6} - \frac{4}{6} = \frac{2}{6} = \frac{1}{3}$, $\frac{13}{4} \cdot \frac{1}{3} = \frac{13}{12}$

d: $-\frac{5}{6} + \frac{5}{6} - \frac{3}{2} \rightarrow \frac{3}{3} \cdot \frac{2}{1} = \frac{6}{3} = 2$

$= \frac{5}{6} \cdot \frac{3}{2} = \frac{15}{12} = \frac{5}{4}$

$\frac{5}{6} \cdot \frac{2}{1} = \frac{5}{12}$

$= \frac{5 \cdot 3}{4 \cdot 3} + \frac{5}{12} - \frac{2 \cdot 12}{12} - \frac{15+5-24}{12}$
 $= \frac{-4}{12} = \frac{-1}{3}$

e: $\frac{1 \cdot 2}{12 \cdot 2} + \frac{1 \cdot 3}{8 \cdot 3} = \frac{2}{24} + \frac{3}{24} = \frac{5}{24}$

$\frac{2 \cdot 5}{1 \cdot 5} - \frac{3}{5} = \frac{10}{5} - \frac{3}{5} = \frac{7}{5}$, $\frac{5}{24} \cdot \frac{5}{7} = \frac{25}{168}$

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