Answer key

The method: Exponent rules with fractions

The same rules: multiplying adds exponents, dividing subtracts them, and a power of a power multiplies them.

$(4x^2)^{\frac{1}{2}} = 4^{\frac{1}{2}} \cdot (x^2)^{\frac{1}{2}} = 2x$ raise each factor to the 1/2: the square root of 4 is 2

$x^{\frac{2}{3}} \div x^{\frac{1}{2}} = x^{\frac{2}{3} - \frac{1}{2}} = x^{\frac{1}{6}}$ dividing: subtract the exponents

$x^{\frac{4}{3}} \cdot x^{\frac{1}{3}} = x^{\frac{4}{3} + \frac{1}{3}} = x^{\frac{5}{3}}$ multiplying: add the exponents

Problems 1 and 2 worked out · Version 0A

$x^{\frac{5}{6}} \div x^{\frac{3}{5}} = x^{\frac{5}{6} - \frac{3}{5}} = x^{\frac{7}{30}}$ dividing: subtract the exponents

$(x^{\frac{3}{5}})^{\frac{5}{6}} = x^{\frac{3}{5} \cdot \frac{5}{6}} = x^{\frac{1}{2}}$ power of a power: multiply the exponents

Exponent rules with fractions · Version 0A

1) $x^{\frac{7}{30}}$ 2) $x^{\frac{1}{2}}$ 3) x 4) $x^{\frac{13}{6}}$ 5) $x^{\frac{1}{6}}$ 6) $x^{\frac{11}{10}}$ 7) $x^{\frac{17}{15}}$
8) $x^{\frac{7}{12}}$ 9) $4x^2$ 10) $3x^2$ 11) $x^{\frac{7}{3}}$ 12) $x^{\frac{23}{30}}$ 13) x^2
14) $x^{\frac{1}{2}}$ 15) $x^{\frac{4}{5}}$ 16) $x^{\frac{1}{15}}$ 17) $2x^2$ 18) $x^{\frac{1}{10}}$ 19) $x^{\frac{23}{6}}$
20) $x^{\frac{31}{12}}$ 21) $x^{\frac{7}{4}}$ 22) $x^{\frac{7}{15}}$ 23) $3x^2$ 24) $2x$ 25) $x^{\frac{3}{2}}$
26) $x^{\frac{11}{12}}$ 27) $5x^3$ 28) $x^{\frac{11}{6}}$ 29) $x^{\frac{1}{6}}$ 30) $x^{\frac{19}{15}}$ 31) $5x^2$
32) $3x^2$ 33) $x^{\frac{9}{10}}$ 34) $x^{\frac{14}{15}}$ 35) $x^{\frac{2}{3}}$ 36) $x^{\frac{2}{5}}$ 37) x^2
38) $2x^4$ 39) $x^{\frac{1}{2}}$ 40) $x^{\frac{11}{6}}$ 41) $3x^3$ 42) $4x^4$ 43) $5x^4$
44) x^2 45) $x^{\frac{17}{6}}$ 46) $x^{\frac{13}{15}}$