

Evaluate:

$$1. \left(\frac{8}{27}\right)^{\frac{1}{3}} = \frac{2}{3}$$

$$2. \left(\frac{64}{125}\right)^{\frac{2}{3}} = \frac{25}{16}$$

$$3. \left(-\frac{32}{243}\right)^{\frac{3}{5}} = -\frac{27}{8}$$

$$4. \left(\frac{9}{100}\right)^{\frac{3}{2}} = \frac{27}{1000}$$

$$5. \left[\left(\frac{27}{8}\right)^{\frac{1}{3}}\right]^{-2} = \frac{4}{9}$$

$$6. \left(\frac{\sqrt[4]{81}}{\sqrt[3]{64}}\right)^{-2} = \frac{16}{9}$$

$$7. (4)^{-3} = \frac{1}{64}$$

$$8. \left(\frac{2}{3}\right)^{-4} = \frac{81}{16}$$

$$9. 3\left(\frac{1}{3}\right)^{-2} + 6 = 27 + 6 = 33$$

$$10. \frac{3}{2}(3)^{-2} + 4 = \frac{3}{2}\left(\frac{1}{9}\right) + 4 = \frac{1}{6} + 4 = 4\frac{1}{6} = \frac{25}{6}$$

Simplify:

$$11. \left(\frac{a^2 b^5}{2 a^4 b^7}\right)^2 = \frac{a^2}{49 b^4}$$

$$12. \left(\frac{4a^7 b^3 c^2}{9a^2 b^4 c^3}\right)^3 = \frac{64 a^{21}}{729 b^3 c^9}$$

$$12. (8^2 \cdot 27^3)^{\frac{1}{3}} = 4 \cdot 27 = 108$$

$$14. \left(x^{\frac{2}{3}} y^{\frac{3}{4}}\right)^{\frac{3}{4}} = x^{\frac{2}{3} \cdot \frac{3}{4}} \cdot y^{\frac{3}{4} \cdot \frac{3}{4}} = x^{\frac{1}{2}} \cdot y^{\frac{9}{16}} = (xy)^{\frac{1}{2}}$$

Calculate:

$\frac{LCD}{24}$

$$15. \frac{3}{8} + \frac{7}{12} = \frac{9}{24} + \frac{14}{24}$$

$\hat{4 \cdot 2} \quad \hat{4 \cdot 3}$

$$= \frac{23}{24}$$

$\frac{LCD}{36}$

$$16. -\frac{5}{9} + \frac{11}{36} = \frac{11 - 20}{36}$$

$$= -\frac{9}{36} = -\frac{1}{4}$$

$\frac{LCD}{60}$

$$17. -\frac{2}{15} - \frac{5}{12} = \frac{-8}{60} - \frac{25}{60}$$

$\hat{3 \cdot 5} \quad \hat{3 \cdot 4}$

$$= \frac{-33}{60} = -\frac{11}{20}$$

$$18. \frac{3}{8} \cdot \frac{7}{12} = \frac{7}{32}$$

$$19. \frac{1}{8} \cdot \frac{7}{11} = \frac{7}{88}$$

$$20. \frac{2}{9} \cdot \frac{8}{3} = \frac{16}{27}$$

$$21. \frac{2}{5} \div \frac{3}{7} = \frac{2}{5} \cdot \frac{7}{3}$$

$$= \frac{14}{15}$$

$$22. \frac{28}{45} \div \frac{14}{90}$$

$$= \frac{28}{45} \cdot \frac{90}{14} = 4$$

$$23. \frac{2}{3} \cdot \frac{12}{38} \div \frac{10}{76}$$

$$= \frac{2}{3} \cdot \frac{12}{38} \cdot \frac{76}{10}$$

$$= \frac{8}{5}$$

Create a table of values:

$$24. f(x) = -2(3)^{2x} + 4$$

x	y
-1	3 ² / ₉
0	2
1	-16

$$25. g(x) = 2(3)^{-(x-1)}$$

x	y
-1	18
0	6
1	2
2	2/3