

12, 16, 17, 18, 19

$$12. \frac{xy^2}{2} \cdot \frac{6x}{y}$$

$$\frac{\cancel{6}x^2y^2}{2y} = \boxed{3x^2y}$$

$$16. \frac{2x^2}{y^3} \left( \frac{-y^3}{2x^2} \right)^2$$

$$\frac{2x^2}{y^3} \cdot \frac{y^6}{4x^4} = \frac{2x^2y^6}{4x^4y^3}$$

$$\boxed{\frac{y^3}{2x^2}}$$

17.

$$\frac{(4r^2s^2)^2}{(4r^2s)^2} = \frac{\cancel{16}r^4s^4}{\cancel{16}r^4s^2} = \boxed{s^2}$$

$$18. \frac{(2hk^3)^2}{(-h^2k^2)^2} = \frac{4\cancel{h}^2k^6}{h^4\cancel{k}^4} = \boxed{\frac{4k^2}{h^2}}$$

$$19. \frac{(xyz^2)^2}{(x^2yz)^2} = \frac{x^2y^2z^4}{x^4y^2z^2} = \boxed{\frac{z^2}{x^2}}$$

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$$20. \frac{(pqr^3)^3}{(p^3qr^2)^2}$$

$$\frac{x^2}{x^2} = 1$$
$$= x^{2-2} = x^0$$

$$x^0 = 1$$

$$(534x)^0 = 1$$

$$\left(\frac{4x^3y}{\pi x^5}\right)^0 = 1$$

$$\frac{x^3}{x^6} = \frac{1}{x^3} = x^{3-6} = x^{-3}$$

$$x^{-3} = \frac{1}{x^3}$$

$$x^{-5} = \frac{1}{x^5}$$

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

$$\frac{x^{-3}}{y^{-2}} = \frac{y^2}{x^3}$$

$$(2^{-2}) \cdot 3^2 = \frac{3^2}{2^2} = \frac{9}{4}$$

$$(-5^{-1})^{-2}$$

$$5^2 = 25$$

$$(-1)^{-3} = \frac{1}{(-1)^3} \\ = \frac{1}{-1} = -$$

$$\left(-\frac{2}{3}\right)^{-2} = \frac{2^{-2}}{3^{-2}} = \frac{3^2}{2^2} = \frac{9}{4}$$

$$(2^{-2} \cdot 3^{-1} \cdot 5^0)^{-1}$$

$$2^2 \cdot 3 \cdot 1$$

$$4 \cdot 3 = \textcircled{12}$$