

**WolframAlpha****PRO**

FOR STUDENTS

sqrt(a*r)*sqrt(|((2*(d-l/4))|^4*(e^(i*2*k*r)))/(4*pi*r^2)*16*pi^2/((2*(d-l/4))|^4*k^2*(e^(i*2*k*a)))/((3*sqrt(pi)*d), d=0.9, a=2, r=1, k*r=1 - Wol... ☆

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Examples

Random

Assuming i is the imaginary unit | Use i as [a variable](#) instead

Input:

$$\left\{ \sqrt{ar} \times \frac{\sqrt{\left| \frac{2 \left(d - \frac{\lambda}{4} \right)^4 e^{i \times 2 k r}}{4 \pi r^2} \right| 16 \times \frac{\pi^2}{\left| 2 \left(d - \frac{\lambda}{4} \right)^4 k^2 e^{i \times 2 k a} \right|}}}{3 \sqrt{\pi} d}, d = 0.9, a = 2, r = 1, k r = 1 \right\}$$

 $|z|$ is the absolute value of z i is the imaginary unit

Result:

$$\left\{ \frac{2 \sqrt{ar} \left| d - \frac{\lambda}{4} \right|^2 \sqrt{\frac{e^{2 \operatorname{Im}(a k) - 2 \operatorname{Im}(k r)}}{r^2}} \sqrt{\left| \frac{1}{k^2 \left| d - \frac{\lambda}{4} \right|^4} \right|}}{3 d}, d = 0.9, a = 2, r = 1, k r = 1 \right\}$$

 $\operatorname{Im}(z)$ is the imaginary part of z

Substitution:

[Approximate form](#)

$$\frac{2 \sqrt{\frac{1}{r^2}} \sqrt{ar} e^{\operatorname{Im}(a k) - \operatorname{Im}(k r)}}{3 d |k|} = \frac{20 \sqrt{2}}{27}$$

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