Graphing the Effective Potential for Light

We derived

$$\frac{1}{b^{*2}} = \frac{1}{b^{*2}} \left(\frac{d\, r_{\text{shell}}}{d\, t_{\text{shell}}} \right)^2 + V^{*2}_{\text{effective,light}}(r^*)$$

Where

$$V^{*2}_{\text{effective,light}}(r^*) \equiv \frac{1 - \frac{2}{r^*}}{r^{*2}}$$

Let's graph this thing

In[31]:=
```
vEffectiveLight[r_] := (1 - 2/r) / r^2
```

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Plot[vEffectiveLight[r], {r, 0, 10}, PlotRange → {{0, 10}, {0, 0.05}},
 AspectRatio → 0.8, GridLines → {Range[0, 10, 1], Range[1 / 3, 4 / 3, 1 / 3] / 27}]
```

Out[32]=