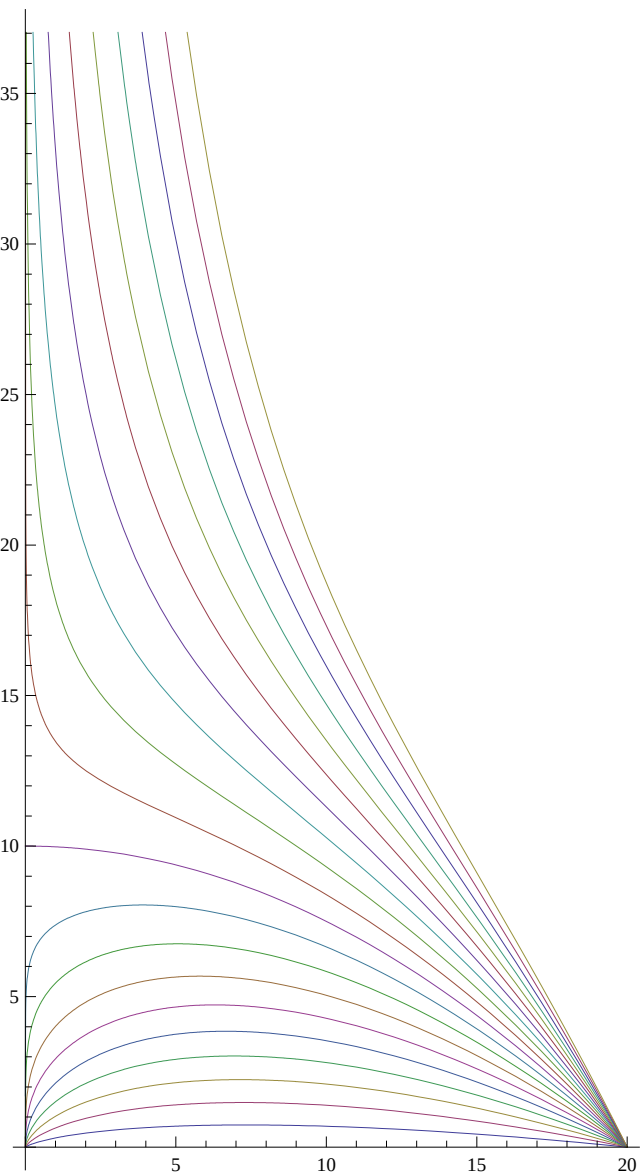
```
s := 20;

funs = Table[(s^r x^(1-r) - s^-r x^(1+r))/2, {r, 0.1, 2.0, 0.1}]

Plot[funs, {x, 0, 20}, AspectRatio → Automatic]
```




```
r := 0.9; s := 20; fun[x_] = (s^r x^(1-r) - s^-r x^(1+r))/2
```

$$\frac{1}{2}\left(14.8227\, x^{0.1} - 0.0674641\, x^{1.9}\right)$$

```
tul = D[fun[x], x]
```

$$\frac{1}{2}\left(\frac{1.48227}{x^{0.9}} - 0.128182\, x^{0.9}\right)$$

```
NIntegrate[Sqrt[1 + tul^2], {x, 0, 20}]
```

```
29.0657
```