

1. Evaluate  $16^{\frac{3}{4}}$ .  
  
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2. For  $f(x)=2x+3$ , find  $f^{-1}(11)$ .  
  
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3. For  $F(x)=\frac{(x^2-9)}{(x-3)}$ , find  $F(5)$ .  
  
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4. Find B, the squared-factor coefficient in the worked decomposition.  
  
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5. Evaluate  $16^{-\frac{3}{4}}$ .  
  
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6. Each root in the new variable must be checked.  
  
☐ True      ☐ False
7. Every intersection point is included if either boundary is solid.  
  
☐ True      ☐ False
8. For negative x,  $\frac{4}{x}$  is negative but  $\frac{4}{x^2}$  is positive.  
  
☐ True      ☐ False
9. The inner output must also lie in the outer function’s domain.  
  
☐ True      ☐ False
10. A repeated root of even multiplicity touches the axis without changing sign, as  $y=x^2$  does at 0.  
  
☐ True      ☐ False

1. **8.0**  
  
 $16=2^4$ , so  $16^{\frac{3}{4}}=2^3=8$ .
2. **4.0**  
  
Solve  $2x+3=11$ , giving  $x=4$ .
3. **8.0**  
  
5 is allowed; after factor cancellation,  $F(5)=5+3=8$ .
4. **1.0**  
  
At  $x=-1$  in the identity,  $1=B$ .
5. **0.125**  
  
The fourth root of 16 is 2; its cube is 8, then take the reciprocal.
6. **True**  
  
True. Each root in the new variable must be checked:  $u=x^2$  with  $u<0$  gives no real x, and  $u>0$  gives two.
7. **False**  
  
A point is included only if it satisfies every inequality, so a dashed boundary excludes it.
8. **True**  
  
True. For negative x,  $\frac{4}{x}$  is negative but  $\frac{4}{x^2}$  is positive.
9. **True**  
  
True. The inner output must also lie in the outer function’s domain.
10. **True**  
  
True. A repeated root of even multiplicity touches the axis without changing sign, as  $y=x^2$  does at 0.