Source:

#source openstax calculus volume 1 section 2.4 exercises

1 | **131**

$$x \leq 0 \implies \boxed{\text{infinite}}$$

2 | **132**

$$\boxed{\text{no discontinuities}}$$

3 | **140**

$$\boxed{\text{Infinite discontinuity}} \frac{-1}{0}$$

4 | **141**

$$\boxed{\text{Continuous}} \left(\frac{\cancel{(2u-1)}(3u+2)}{\cancel{2u-1}} \right)$$

5 | **145**

$$3x + 2 = 2x - 3 \implies \boxed{x = -5}$$

6 | **150**

$$\boxed{\text{The function is not continuous at } x = 2}$$

7 | **152**

7.1 | **a**

$$\cos t = t^3$$

7.2 | **b**

Let $f(x) = \cos x$ and $g(x) = x^3$. For $a = 0$ and $b = \frac{\pi}{2}$:

$$f(a) = 1 g(a) = 0 f(b) = 0 g(b) = \frac{\pi^3}{8} > 1$$

Because these functions traverse the