

Task 1: Solving Equations

$$\text{Solve for } x: \quad 2x + 7 = 10$$

Task 2: The Prince and the Troll

A prince picked a basketful of golden apples in the Enchanted Orchard. On his way home, a troll who guarded the orchard stopped him. The troll demanded payment of one-half the apples, plus two more. The prince gave him the apples and set off again. A little farther on, a second troll stopped him. This troll demanded payment of one-half of the remaining apples, plus two more. The prince paid him and set off again. Just before the prince left the Enchanted Orchard, a third troll stopped him and demanded one-half of the remaining apples, plus two more. The prince paid him, and sadly went home. He only had two golden apples left. How many apples had the prince picked?

Task 3: Connected Math Sample – Loosening the Earth Belt

Think about the different math concepts that could be introduced or reinforced using this example.

- What questions could you pose to help students access the content?
- Would you consider this to be a worthwhile mathematical task? Explain.

49. a. Suppose a piece of rope wraps around Earth. Then the rope is cut, and rope is added to make the entire rope 3 feet longer. Suppose the new rope circles the earth exactly the same distance away from the surface at all points. How far is the new rope from Earth's surface?



- b. A piece of rope is wrapped around a person's waist. Then rope is added to make it 3 inches longer. How far from the waist is the rope if the distance is the same all around?
- c. Compare the results in parts (a) and (b).