

1. Cornell Car Assurance Company sells a policy with a linearly disappearing deductible. Under the policy, Cornell will pay zero if the claim is less than 500 and will pay the entire claim for amounts over 2000.

- a. Liz who owns one of these policies has an accident where the loss is 1300.

Determine the loss payment by Cornell.

Solution:

$$\text{Deductible} = \frac{2000 - 1300}{2000 - 500}(500) = 233.33$$

$$\text{Loss Payment} = 1300 - 233.33 = 1066.67$$

- b. Jillian also owns one of these policies. Jillian has an accident where the loss is L . Cornell makes a loss payment of 1800.

Determine L .

Solution:

$$\text{Deductible} = \frac{2000 - L}{2000 - 500}(500) = L - 1800$$

$$(L - 1800)(3) = 2000 - L \implies 4L = 2000 + 5400 \implies L = 1850$$

2. Jack purchases a homeowners policy with an 80% coinsurance provision. The home is insured for 150,000. The home was worth 180,000 on the day the policy was purchased. There is a tornado that causes 20,000 worth of damage. On the date of the tornado, the house was worth 250,000.

Calculate the benefit payment that Jack will receive under his policy.

Solution:B

$$\begin{aligned} \text{Payment} &= \text{Max} \left\{ \text{Policy Limit}; \left(\frac{(\text{Policy Limit})}{(0.80)(\text{Value at time of Loss})} \right) (\text{Loss}) \right\} \\ &= \text{Max} \left\{ 150,000; \left(\frac{(150,000)}{(0.80)(250,000)} \right) (20,000) \right\} = 15,000 \end{aligned}$$

A key point here is that you use the value on the date of the loss, not the value on the day the policy was purchased.

3. Jason purchases a homeowners policy with an 80% coinsurance provision. The home is insured for 150,000. The home was worth 180,000 on the day the policy was purchased. There is a tornado that causes 220,000 worth of damage. On the date of the tornado, the house was worth 250,000.

Calculate the benefit payment that Jason will receive under his policy.

Solution:B

$$\begin{aligned} \text{Payment} &= \text{Max} \left\{ \text{Policy Limit}; \left(\frac{(\text{Policy Limit})}{(0.80)(\text{Value at time of Loss})} \right) (\text{Loss}) \right\} \\ &= \text{Max} \left\{ 150,000; \left(\frac{(150,000)}{(0.80)(250,000)} \right) (220,000) \right\} = 150,000 \end{aligned}$$

Note that since the coinsurance calculation provides a payment of 165,000, the payment is limited to the policy limit of 150,000.

4. The White Company purchases a commercial insurance policy with a property policy limit of 70,000. The insurance policy has an 80% coinsurance clause and a deductible of 1000. The deductible is applied before the limit or coinsurance is applied.

White suffers a loss of 30,000. At the time of the loss, the value of the property is 100,000.

Determine the amount that the insurance company will pay.

Solution:

The minimum coverage required by the coinsurance is $(100,000)(0.8) = 80,000$. Since the policy limit is 70,000, the coinsurance does apply. Therefore, the amount paid is

$$\frac{70,000}{80,000}(30,000 - 1000) = 25,375$$

- 5.