Unit 8 · Insurance & Risk Cheat Sheet

Unit 8 focus: understand premiums, deductibles and coverage

1 CORE INSURANCE TERMS

Term	Meaning / quick example
Premium	Price of coverage, paid even with no claim.
Deductible	Covered loss you pay before specified benefits.
Limit	Maximum covered payment under stated terms.
Exclusion	Loss or service the policy does not cover.

2 WHAT NEEDS PROTECTION?

Coverage	Typical purpose
Health	Covered medical care.
Auto liability	Injury or damage you cause others.
Collision / comprehensive	Your car: crash / specified noncollision losses.
Renters / homeowners	Property and specified liability risks.

Policies differ. Check exclusions, limits, networks and required endorsements; the name alone does not define coverage.

3 A PROPERTY CLAIM

Simplified payout: $\min(\max(L-d,0),C)$. L = covered loss, d = deductible, C = payout cap; all dollars.

Example: \$8,000 covered loss; \$1,000 deductible; \$10,000 payout cap.
After deductible: $8{,}000-1{,}000=7{,}000$
Apply cap: $\min(7{,}000,10{,}000)=7{,}000$

Answer: \$7,000 insurer; \$1,000 you

4 HEALTH-PLAN TERMS

Term	Meaning / quick example
Coinsurance	Your share of covered costs after deductible; e.g., 20%.
Copay	Fixed amount for a specified service.
OOP maximum	Annual cap on eligible covered out-of-pocket costs; premiums excluded.
Network	Contracted providers; out-of-network rules may differ.

5 SIMPLIFIED HEALTH COST

For covered in-network bills B, deductible d, coinsurance c and OOP cap M:
$O=\min\{M,\min(B,d)+c\max(B-d,0)\}$
B, d, M, O are dollars; c is a decimal.

Assume no copays, all costs count toward deductible and cap, and no exclusions. Actual plans may apply separate service rules.

Annual total = 12 × monthly premium + O.

6 HEALTH-PLAN EXAMPLE

Covered in-network bills \$9,000; deductible \$2,000; coinsurance 20%; cap \$6,000; premium \$210 monthly.

Example: No copays or excluded charges.
Your covered cost: $2{,}000+0.20(7{,}000)=3{,}400$
Annual premiums: $210(12)=2{,}520$

Answer: \$5,920 total annual cost

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More practice: compare annual costs and the risks you can carry

1 WHICH HEALTH PLAN WINS?

Same covered bills	Plan A	Plan B
Monthly premium	$150	$250
Deductible	$3,000	$1,000
Coinsurance / cap	20% / $6,000	20% / $4,000
Total at $0 bills	$1,800	$3,000
Total at $9,000 bills	$6,000	$5,600

No copays, exclusions or network differences. A saves $1,200 with no claims; B saves $400 at $9,000 bills. Expected care and available cash affect the choice.

2 WORST-CASE BUDGET

For covered in-network care in the simplified plans:

$\text{Worst annual total} = 12p + M$

p = monthly premium dollars; M = OOP cap.

A: $1,800 + $6,000 = **$7,800**
B: $3,000 + $4,000 = **$7,000**

Noncovered or out-of-network costs may add more. A deductible is not the same as an OOP maximum.

3 EXPECTED LOSS

$E = \sum p_j L_j$; p = probability (decimal), L = loss dollars. Expected value is a long-run average.

Example: 2% chance of a $10,000 loss; otherwise no loss.
Expected loss: $0.02(10{,}000) + 0.98(0) = 200$
Reality: One year may have $0 or $10,000 loss.

Answer: $200 expected annual loss

4 DEDUCTIBLE TRADE-OFF

Suppose raising a deductible from $500 to $1,500 saves $200 yearly.

Extra risk per qualifying claim = $1,000.
$\frac{1{,}000}{200} = 5$ years of premium savings.

This is a simple recovery-time comparison, not a prediction of claims. Consider claim frequency and whether you could pay $1,500 tomorrow. A higher deductible can fit larger reserves.

5 COMPARE THE WHOLE POLICY

- Same covered risks, limits and exclusions?
- Doctors, hospitals and medicines covered?
- How much could I owe in a bad year?
- Could I pay the deductible without new debt?
- Are liability limits enough for the risk?
- Prioritize losses you cannot comfortably absorb; smaller predictable costs may fit your own reserves.

6 REMINDERS & MISTAKES

✓ Do remember

- Premiums buy risk protection, even without a claim.
- Compare both likely use and severe-loss scenarios.

✗ Common mistakes

- Lowest premium = lowest cost: include your share of claims.
- Deductible met = free care: coinsurance may remain.
- OOP cap covers everything: premiums and exclusions may not count.
- Expected cost = cash needed: a rare loss can be much larger.