***Financial Markets and Institutions, 7e* (Saunders)**

**Chapter 18 Pension Funds**

1) Of the different types of defined benefit plans, plans using the final pay method will usually produce the biggest retirement benefit to employees.

Answer: TRUE

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

2) A Keogh plan is designed for self-employed individuals.

Answer: TRUE

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

3) Pension plans administered by the federal government are called insured pension plans.

Answer: FALSE

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-04 Identify the different types of public pension funds.

Accessibility: Keyboard Navigation

4) There are now Roth versions of 401(k) plans and 403(b) plans as well as Roth IRAs.

Answer: TRUE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

5) Most state and local pension funds are underfunded.

Answer: TRUE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.; 18-01 Describe the difference between a private pension fund and a public pension fund.

Accessibility: Keyboard Navigation

6) Noninsured pension plans generally invest in riskier assets than insured pension plans.

Answer: TRUE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

7) If you believe that taxes are going to go up and you will likely have to pay a high tax rate when you retire, you will probably be better off with a Roth IRA than with a traditional IRA.

Answer: TRUE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Evaluate

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

8) If you are terminated before you are fully vested in an employer-sponsored plan, you may not get to keep previous contributions to your pension made by your employer.

Answer: TRUE

Difficulty: 1 Easy

Topic: Regulation

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

9) In a defined benefit plan, the retirement benefit will vary according to rates of return on pension fund reserves.

Answer: FALSE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

10) In terms of assets managed and numbers of plans, defined contribution plans are becoming more predominant and defined benefit plans are declining.

Answer: TRUE

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-01 Describe the difference between a private pension fund and a public pension fund.

Accessibility: Keyboard Navigation

11) In 2016, pension fund reserves held by life insurance companies represent about 45 percent of the typical life insurer's assets.

Answer: TRUE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

12) Pension contributions paid to insured pension funds and the assets purchased with these funds become the legal property of the insurance company and are not the legal property of the individual pension fund contributors.

Answer: TRUE

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

13) A defined benefit pension plan expects to pay out $25 million per year over the next 10 years to pensioners. The fund currently has $155 million in pension assets that are earning 10 percent per year. This plan is underfunded.

Answer: FALSE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Evaluate

AACSB: Analytical Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

14) If you are married and you and your spouse make $160,000 total per year, you are not allowed to contribute to an IRA.

Answer: FALSE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

15) Assets in 401(k) plans are now greater than assets in private defined benefit plans.

Answer: TRUE

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.; 18-01 Describe the difference between a private pension fund and a public pension fund.

Accessibility: Keyboard Navigation

16) A pension plan has promised to pay out $25 million per year over the next 15 years to its employees. Actuaries estimate the rate of return on the fund's assets will be 5.50 percent. What amount of pension fund reserves (to the nearest dollar) are needed for the plan to be fully funded?

A) $375,000,000

B) $310,945,678

C) $250,939,524

D) $202,345,555

E) $198,466,231

Answer: C

Explanation: $25,000,000 × PVIFA (5.50%, 15 yrs.) = $250,939,524

With a Financial Calculator: Input N = 15, I = 5.5, PMT = 25,000,000 and FV = 0 and calculate PV to get 250,939,524

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

17) Private pension funds are funds administered by

I. the federal government.

II. state and local governments.

III. insurance companies.

IV. banks and mutual funds .

A) I and II only

B) II and III only

C) III and IV only

D) II, III, and IV only

E) I and III only

Answer: C

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-01 Describe the difference between a private pension fund and a public pension fund.

Accessibility: Keyboard Navigation

18) In general terms, which one of the following plan types is the riskiest for an employee on a year-to-year basis?

A) Defined contribution plan invested in fixed-income securities

B) Defined contribution plan invested in equities

C) Final pay defined benefit plan

D) Career average defined benefit plan

E) Overfunded defined benefit plan

Answer: B

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

19) In recent years defined contribution plans have grown faster than defined benefit plans in which of the following areas?

I. Fund assets

II. Number of funds

III. Number of plan participants

A) I only

B) I and II only

C) II and III only

D) I, II, and III

E) II only

Answer: D

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-01 Describe the difference between a private pension fund and a public pension fund.

Accessibility: Keyboard Navigation

20) Congratulations, you have just been employed! You now have a choice between a flat benefit at retirement equal to $4,000 times your years of service, or a career average formula of 3.50 percent of your average salary times your years of service. You expect to work 40 years. At what average salary would you be indifferent between the two alternatives?

A) $160,000

B) $145,444

C) $114,286

D) $101,104

E) $98,976

Answer: C

Explanation: ($4,000 × 40)/(0.035 × 40) = $114,286

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Evaluate; Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

21) At your new job you estimate that your average salary over your working years will be $95,000 per year. How many more years would you have to work to receive as much benefit from a flat benefit of $3,000 times years of service as you would receive from 3.75 percent of your average salary times years of service?

A) 1.33 times as many years

B) 0.75 times as many years

C) 1.19 times as many years

D) 2.40 times as many years

E) 1.50 times as many years

Answer: C

Explanation: (0.0375 × 95,000)/3,000 = 1.19

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

22) An employee who has worked for his firm for 30 years can retire right now and receive a constant annual benefit of $45,000. He has a final pay plan that pays his average salary over his final five years x 2 percent x years of service. He has decided he will keep working five more years but only if by doing so his retirement benefits will grow at 6 percent per year. How much would his expected average salary (to the nearest dollar) have to be over the next five years to keep him working?

A) $54,198

B) $86,029

C) $51,617

D) $66,911

E) $53,147

Answer: B

Explanation: (45,000 × 1.065)/(0.02 × 35) = 86,029

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

23) The main advantage of a profit sharing Keogh plan over a money sharing Keogh plan is that profit sharing plans

A) are eligible for PBGC insurance and money sharing plans are not.

B) have higher maximum contributions than money sharing plans.

C) can have contributions that vary from year to year with profits, while money sharing plan contributions are a fixed percentage of the employee's income.

D) profit sharing Keogh plans are eligible for PBGC insurance and money sharing plans are not, and they have higher maximum contributions than money sharing plans.

E) None of these options are correct.

Answer: C

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

24) The Pension Protection Act of 2006 requires companies to correct funding shortfalls in their defined benefit plans within

A) one year.

B) three years.

C) five years.

D) 10 years.

E) 20 years.

Answer: C

Explanation: It was 20 years before the law went into effect.

Difficulty: 2 Medium

Topic: Regulation

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

25) Under ERISA, pension fund managers are required to invest fund assets as wisely as if they were investing their own money. This requirement is called the

A) owl rule.

B) vesting requirement.

C) 403(b) requirement.

D) prudent person rule.

E) funding rule.

Answer: D

Difficulty: 1 Easy

Topic: Regulation

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

26) A(n) \_\_\_\_\_\_\_\_ plan does not require the employer to guarantee retirement benefits nor to maintain a minimum level of pension reserves.

A) defined benefit

B) insured pension

C) corporate pension

D) uninsured pension

E) defined contribution

Answer: E

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

27) Which of the following statements about 401(k) plans are true?

I. They are defined benefit plans.

II. They allow employer and employee contributions.

III. Earnings accrue tax-free during the employee's working years.

IV. They allow employee discretion in asset allocation.

V. They always have minimum guaranteed rates of return.

A) I, IV, and V only

B) I, II, and V only

C) II and III only

D) II, III, and IV only

E) All of these choices are correct.

Answer: D

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

28) An employee contributes 9 percent of his salary to his 401(k) plan and the employer matches with 40 percent of the first 6 percent of the employee's salary. The employee earns $90,000 and is in a 28 percent tax bracket. If the employee earns 10 percent on the plan investments, what is his one-year rate of return relative to the net amount of money he invested?

A) 16.28 percent

B) 51.25 percent

C) 90.07 percent

D) 93.52 percent

E) 29.72 percent

Answer: D

Explanation: FV1 = 90,000 × (9% + (0.4 × 0.06)) × 1.10 = 11,286; Employee after-tax contribution = 90,000 × (9% × (1 − 28%)) = 5,832; HPR = (11,286/5,832) − 1 = 93.52%

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

29) Employee plus employer contributions to a 401(k) are $15,000 per year. Equity funds are earning 15 percent, bond funds 8 percent, and money market funds 6 percent. The employee wants to retire as soon as possible with $1 million in retirement assets. If he puts 50 percent of his money in stocks, 30 percent in bonds, and 20 percent in money funds, how long until he can expect to retire?

A) 3.3 years

B) 9.7 years

C) 20.2 years

D) 2.4 years

E) 12.2 years

Answer: C

Explanation: Rate of return = (15% × 0.5) + (8% × 0.3) + (6% × 0.2) = 11.10%; 1,000,000/15,000 = FVIFA (11.10%, N); solve for N with financial calculator or use log rule and annuity formula.

With a financial calculator: PMT = − 15,000, FV = 1,000,000, I = 11.10 and PV = 0 and solve for N to get 20.218.

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

30) Which of the following statements are true about a traditional IRA?

I. Subject to an income limit, in 2016 a single person could contribute up to $5,500 per year ($6,500 if over 50 years old) of pretax income to an IRA.

II. All withdrawals are tax-free.

III. Earnings on the IRA account are not taxed until withdrawn.

IV. You must begin withdrawals at age 59½.

V. Withdrawal(s) can be a lump sum or installments.

A) I, II, IV

B) I, II, IV, and V

C) I, III, and V

D) II, IV, and V

E) III, IV, and V

Answer: C

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

31) Which of the following is/are true about a Roth IRA?

I. Contributions are tax deductible.

II. Withdrawals after retirement are not taxed.

III. You must begin withdrawals at age 70½.

IV. Employers match contributions.

V. They are only available to individuals earning less than $50,000, or households earning less than $90,000.

A) I, II, and IV

B) II, IV, and V

C) I, III, and IV

D) II only

E) V only

Answer: D

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

32) A retirement account specifically designed for self-employed persons is a

A) Roth IRA.

B) traditional IRA.

C) Keogh.

D) Penny Benny.

E) public pension plan.

Answer: C

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

33) Under ERISA the maximum time period allowed for vesting is \_\_\_\_\_\_\_\_ years.

A) three

B) five

C) eight

D) 10

E) 15

Answer: D

Difficulty: 1 Easy

Topic: Regulation

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

34) ERISA established all but which one of the following?

A) Prudent man rule

B) Maximum vesting times

C) Minimum funding requirements

D) Insurance for pension plan participants

E) Minimum payouts for defined contribution plans

Answer: E

Difficulty: 2 Medium

Topic: Regulation

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

35) The PBGC

I. insures participants of defined benefit plans if plan funds are insufficient to meet contractual pension obligations.

II. insures participants of defined contribution plans if investment returns are insufficient to meet expected pension obligations.

III. regulates day-to-day pension fund operations.

A) I only

B) II only

C) I and III only

D) II and III only

E) I, II, and III

Answer: A

Difficulty: 2 Medium

Topic: Regulation

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

36) A defined benefit pension plan has expected payouts of $15 million per year for eight years and then $20 million per year over the following 15 years. Actuaries have estimated that the fund can be expected to earn an average of 5.25 percent on its assets. The fund currently has reserves of $185,475,000. The plan is \_\_\_\_\_\_\_\_ by about \_\_\_\_\_\_\_\_ million.

A) underfunded; $100

B) underfunded; $59

C) overfunded; $30

D) overfunded; $24

E) underfunded; $46

Answer: E

Explanation: 185.475m − [15m × PVIFA (5.25%, 8) + 20m × PVIFA (5.25%, 15)/PVIF (5.25%, 8)] = −46.1m

With a financial calculator, use the CF functions to solve for the NPV of the fund:

Input CF1 to CF8 = 15,000,000 and CF9 to CF23 = 20,000,000, then I = 5.25 and solve for NPV to get 231,534,937.

The fund is underfunded by 185,475,000 − 231,534,937 =  $46,059,937

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Evaluate; Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

37) An employee contributes 6 percent of her salary to her 401(k) plan and her employer contributes another $1,900. The employee earns $75,000 and is in a 28 percent tax bracket. If the employee earns 8.50 percent on all funds invested each year and her salary does not change, how much will she have in her account in 20 years?

A) $195,369

B) $213,133

C) $244,667

D) $289,055

E) $309,613

Answer: E

Explanation: [(6% × 75,000) + 1,900] × FVIFA (8.50%, 20) = 309,613

With a financial calculator: Input N = 20, I = 8.5, PMT = 6,400, PV = 0 to solve for FV 309,612.88.

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

38) Employee plus employer contributions to a 401(k) are $11,000 per year. Equity funds are earning 10 percent; bond funds, 5 percent; and money market funds, 3 percent. The employee will retire in 30 years. How much money will he have if he earns the average return from putting 65 percent of his money in equities, 30 percent in bond funds, and the rest in money market funds?

A) $1,838,526

B) $1,280,925

C) $1,654,320

D) $1,978,565

E) $1,248,550

Answer: B

Explanation: r = (65% × 10) + (30% × 5) + (5% × 3) = 8.15%; FV30 = 11,000 × FVIFA (8.15%, 30) = 1,280,925.

With a financial calculator: Input N = 30, I = 8.15, PMT = 11,000, PV = 0 to solve for FV 1,280,924.83.

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

39) You want to have $1,200,000 when you retire and you are in a defined contribution plan. You can earn 9 percent per year on the money invested and you will retire in 25 years. Your employer also contributes to your plan. The employer will contribute 4 percent of what you put into the plan each year. How much do you have to contribute per year to meet your goal?

A) $18,435.43

B) $17,654.87

C) $16,879.32

D) $13,622.60

E) $15,999.44

Answer: D

Explanation: 1,200,000/FVIFA (9 percent, 25 years) = $14,167.50 total annual payment required. Your contribution must be 14,167.50/1.04 = $13,622.60

With a financial calculator solve for the payment amount first: FV = 1,200,000, N = 25, I = 9, PV = 0 and solve for PMT to get 14,167.5. The employee's contribution will be 14,167.50/1.04 = $13,622.60

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

40) Vesting refers to

A) how long until an employee owns any employer contributions to the employee's pension plan.

B) how long until an employee can transfer any of his own contributions to a new plan if he switches jobs.

C) eligibility requirements to retire early.

D) restrictions on asset allocations within a defined contribution plan.

E) the extent to which an employee materially participated in a given business in a given year.

Answer: A

Explanation: The book uses the word *vesting* in a different manner to refer to the time until one is eligible to receive any pension benefits.

Difficulty: 1 Easy

Topic: Regulation

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

41) IRAs are

A) self-directed investment vehicles designed to provide supplemental retirement income.

B) corporate retirement plans for self-employed individuals and small businesses.

C) specific classes of investments such as equities or bonds issued by certain corporations.

D) investment vehicles created by ERISA.

E) special types of life insurance policies.

Answer: A

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

42) A country where the link between public pension benefits and amount of taxes paid in is weak is

A) Sweden.

B) Italy.

C) Great Britain.

D) Chile.

E) France.

Answer: E

Difficulty: 1 Easy

Topic: Global Issues

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-06 Review the major issues for pension funds in the global markets.

Accessibility: Keyboard Navigation

43) Social Security began running a deficit for the first time in what year?

A) 1990

B) 1995

C) 2000

D) 2005

E) 2010

Answer: E

Difficulty: 2 Medium

Topic: Financial Asset Investments and Recent Trends

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-04 Identify the different types of public pension funds.

Accessibility: Keyboard Navigation

44) Social Security is a:

A) fully funded pension plan.

B) federally insured private pension plan.

C) pay-as-you-go system.

D) government backed private pension plan.

E) overfunded pension plan.

Answer: C

Difficulty: 2 Medium

Topic: Financial Asset Investments and Recent Trends

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-04 Identify the different types of public pension funds.

Accessibility: Keyboard Navigation

45) What is the main asset held by private pension funds?

A) Corporate bonds

B) U.S. Government bonds

C) Municipal bonds

D) Corporate equities

E) Money market securities

Answer: D

Difficulty: 1 Easy

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-01 Describe the difference between a private pension fund and a public pension fund.

Accessibility: Keyboard Navigation

46) In general, in a defined benefit pension plan, the risk of shortfall is borne by the \_\_\_\_\_\_\_\_; while in a defined contribution pension plan, the risk of the shortfall is borne by the \_\_\_\_\_\_\_\_.

A) plan administrator; employee

B) employee; employer

C) employer; employee

D) government; employer

E) employer; government

Answer: C

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

47) Which of the following formulas is not used to determine pension benefits for defined benefit pension funds?

A) Flat-benefit formula

B) Career-average formula

C) Final-pay formula

D) Career-contribution formula

E) All of these choices are correct.

Answer: D

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

48) Which of the following is not one of the principal features of ERISA?

A) Vesting of benefits

B) Employee termination

C) Fiduciary responsibility

D) Transferability

E) Funding

Answer: B

Difficulty: 2 Medium

Topic: Regulation

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

49) Your company sponsors a 401(k) plan into which you deposit 8 percent of your $95,000 annual income. Your company matches 65 percent of the first 10 percent of your earnings. You expect the fund to yield 9 percent next year. If you are currently in the 30 percent tax bracket, what is your one-year return?

A) 64.136%

B) 135.518%

C) 182.232%

D) 95.358%

E) 112.135%

Answer: C

Explanation:

|  |  |  |  |
| --- | --- | --- | --- |
|  | | | |
| Your annual investment is | | | |
| Employee's gross contribution = $95,000 × 0.08 = | $ | 7,600 |  | |
| Tax Savings = $7,600 x 0.30 = |  | 2,280 |  | |
| Employee's net of tax cost | $ | 5,320 |  | |
| Employer's match = $95,000 x 0.65 x 0.10 = | $ | 6,175 |  | |
| Total 401(k) investment at year's start | $ | 13,775 |  | |
|  | | | |
| Your one-year return is |  |  |  | |
| 1-year earnings = $13,775 x 0.09 = | $ | 1,239.75 |  | |
| Total 401(k) investment at year-end | $ | 15,014.75 |  | |
| Employee's 1-year return = ($15,014.75 − $5,320)/$5,320 = 182.232% | | | |

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

50) Why do insured pension plans invest in less risky assets than uninsured pension plans?

Answer: Insured pension plans are plans that are managed by insurance companies; pension plan assets are owned by the insurance company, not the pension plan. The life insurer promises to pay a rate of return to the plan and is liable for losses, which makes them leery of risk. In a noninsured plan, the fund owns its own assets and the fund advisers are often willing to take on more risk in hopes of earning a higher rate of return and thereby minimizing the corporate employer's required contribution.

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

51) A 55-year-old has just changed jobs and has a choice between a defined benefit plan [final pay] and a defined contribution plan. He will work for 10 more years. What should he consider in making his decision?

Answer: He should consider the final pay formula, his expected salary over the final pay period, and whether that salary will keep up with and hopefully surpass inflation. For the defined contribution  plan, the variables include his tax bracket, contribution amount by him and his employer, and rates of return offered in the markets. The amount of choice in asset allocation may also be a factor and the short length of time to invest. The individual's level of risk aversion would also play a part in the decision.

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand; Create

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

52) Suppose that a corporate defined benefit plan had decided it will keep pension fund reserves equal to the present value of expected future pension benefits to be fully funded. The plan has expected payouts of $12 million per year for 15 years and then $22 million per year for the subsequent 10 years. All payments are at year-end. At the current 5.75 percent rate of return on the plan's assets, the plan is currently fully funded. If the plan can increase the proportion of stock investments the fund holds and raise the expected rate of return to 8.00 percent, how many dollars of pension assets can be freed up by the corporation?

Answer: Current fund assets = [$12 million × PVIFA (5.75%, 15 yrs.)] + [$22 million × PVIFA (5.75%, 10 yrs.) × PVIF (5.75%, 15 yrs.)] = $189,311,572

Assets required at 8% = [$12 million × PVIFA (8%, 15 yrs.)] + [$22 million × PVIFA (8%, 10 yrs.) × PVIF (8%, 15 yrs.)] = $149,250,289

Assets freed up by rate change $40,061,283

(Note: Actuaries have to approve the rate change.)

Explanation: Actual calculations may be more complicated than this but this is a good time value example. Not in the text.

With a financial calculator, use the CF functions to solve for the NPV of the fund when I = 5.75%.

Input CF1 to CF15 = 12,000,000 and CF16 to CF25 = 22,000,000, then I = 5.75 and solve for NPV to get 189,311,572.4.

Find the value of the fund when I = 8%.

Input CF1 to CF15 = 12,000,000 and CF16 to CF25 = 22,000,000, then I = 8.0 and solve for NPV to get 149,250,289.3.

The amount that can free up is the difference 189,311,572.4 − 149,250,289.3 = 40,061,283.1

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

53) Why do employees increasingly prefer defined contribution plans to defined benefit plans?

Answer: Employees like the chance to manage their own retirement portfolios in hopes of earning more. The public is better educated about investments today than at any time in the past and employees wish to incur greater amounts of risk in the hope of earning higher retirement benefits than defined benefit  plan sponsors can promise. The strong bull markets of the 1990s also significantly contributed to the interest in defined contribution plans in the past. The strong rebound in the stock market following the 2008–2009 financial crisis has also increased interest in these plans.

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry

Bloom's: Understand; Evaluate

AACSB: Reflective Thinking

Learning Goal: 18-02 Distinguish between and calculate the benefits from a defined benefit and a defined contribution pension fund.

Accessibility: Keyboard Navigation

54) You are 30-years old and you make $110,000 per year. You calculate that you cannot  retire until you have accumulated a lump sum amount of $2,000,000 to live on after retirement. You contribute 6 percent of your salary to your 401(k) and your employer contributes 3 percent of your salary. You plan on investing 65 percent of your funds in equities on which you expect to earn an average rate of return of 10 percent, and the rest in bonds projected to earn 5 percent. If your salary does not grow, how old will you be when you can retire?

Answer:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | | | | |
| Employee contribution per year | $ | 6,600 | = | (6% × 110,000) |  | |
| Employer | $ | 3,300 | = | (3% × 110,000) |  | |
| Total contribution per year | $ | 9,900 |  |  |  | |
| Expected  rate of return = (0.65 × 0.10) + (0.35 × 0.05) = 0.0825 or 8.25% | | | | | |
| $9,900 × (FVIFA(8.25%, N)) = $2,000,000 | | | | | |

N = 36.2 years so you will be 66.2-years old when you hit your retirement goal.

Expected return = (0.65 × 10) + (0.35 × 5) = 8.25%

Employee contribution is 0.06 × 110,000 = 6,600

Employer contribution is 0.03 × 110,000 = 3,300

Total contribution = $9,900

With a financial calculator, input PMT = −9,900, I = 8.25, FV = 2,000,000, PV = 0 and solve for N to get 36.23. You will be 66.23 when you hit your retirement goal.

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

55) An individual is considering contributing $4,000 per year to either a traditional or a Roth IRA. Payments would begin in one year. If she uses the traditional IRA, her contributions would be fully deductible. She is 40-years old and is in a 28 percent tax bracket. On either IRA she can earn 7 percent. When she retires at age 65, she believes she will be in a 15 percent tax bracket. Which type of IRA should she choose if she invests not only the $4,000 per year, but any tax savings due to the deductibility of her contributions in a taxable investment earning a pretax rate of 7 percent? She will withdraw all her money upon retirement and may owe taxes then, depending on the type of IRA chosen.

Answer:

Traditional IRA + Taxable investment

Amount invested per year is $4,000

Tax Savings = (0.28 × $4,000) = $1,120

The IRA earns 7%, and the taxable investment earns 7% × (1 − 0.28) = 5.04% after-tax.

After-tax future value of the IRA + Future value of the invested deductions (after-tax):

[$4,000 × (FVIFA7%, 25yr.) × (1−0.15)] + $1,120 −(FVIFA5.04%, 25yr.) = $215,046.73 + $53,750.08 = $268,796.81

With a financial calculator, first find the after-tax value of the IRA: Input PMT = 4,000, N = 25, I = 7, PV = 0 and solve FV to get $252,996.15 and on after-tax basis $252,996.15 × (1 − 0.15) = $215,046.73

Second, find the future value of the after-tax deductions: input PMT = 1,120, N = 25, I = 5.04, PV = 0 and solve FV to get 53,750.08.

The after-tax future value of the IRA + Future value of the invested deductions (after-tax):

$215,046.73 + 53,750.08 = $268,796.81

Roth IRA:

$4,000 × (FVIFA7%, 25yr.) = $252,996.15

The expected FV of the Roth IRA is less than the expected FV of the traditional IRA plus the invested tax savings, so she should choose the traditional IRA and invest the tax savings.

Find the future value of Roth contributions: input PMT = 4,000, N = 25, I = 7, PV = 0 and solve FV to get $252,996.15.

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Evaluate; Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

56) An individual is considering contributing $4,000 per year to either a traditional or a Roth IRA. Payments would begin in one year. If she uses the traditional IRA, her contributions would be fully deductible. She is 40-years old and is in a 28 percent tax bracket. On either IRA she can earn 7 percent. When she retires at age 65, she believes she will be in a 28 percent tax bracket. Which type of IRA should she choose if she invests not only the $4,000 per year, but any tax savings due to the deductibility of her contributions in a taxable investment earning a pretax rate of 7 percent? She will withdraw all her money upon retirement and may owe taxes then, depending on the type of IRA chosen.

Answer:

Traditional IRA + Taxable investment

Amount invested per year is $4,000

Tax Savings = (0.28 × $4,000) = $1,120

The IRA earns 7%, and the taxable investment earns 7% × (1 − 0.28) = 5.04% after-tax.

After-tax future value of the IRA + Future value of the invested deductions (after-tax):

[$4,000 × (FVIFA7%, 25yr.) × (1 − 0.28)] + $1,120 × (FVIFA5.04%, 25yr.) = $182,157.23 + $53,750.08 = $235,907.31

With a financial calculator, first find the after-tax value of the IRA: Input PMT = 4,000, N =25, I = 7, PV = 0 and solve FV to get $252,996.15 and on after-tax basis $252,996.15 × (1 − 0.28) = $182,157.23

Second, find the future value of the after-tax deductions: input PMT = 1,120, N = 25, I = 5.04, PV = 0 and solve FV to get 53,750.08.

The after-tax future value of the IRA + Future value of the invested deductions (after-tax):

$182,157.23 + 53,750.08 = $235,907.31

Roth IRA:

$4,000 × (FVIFA7%, 25yr.) = $252,996.15

Find the future value of Roth contributions: input PMT = 4000, N = 25, I = 7, PV = 0 and solve FV to get $252,996.15.

The expected FV of the Roth IRA is greater than the expected FV of the traditional IRA plus the invested tax savings, so she should choose the Roth IRA. (Note the break-even tax rate is about 21.25 percent in retirement; above this rate you would prefer the Roth IRA; below it, the standard IRA.)

Difficulty: 3 Hard

Topic: Size, Structure, and Composition of the Industry

Bloom's: Evaluate; Analyze; Apply

AACSB: Analytical Thinking

Learning Goal: 18-03 Identify the characteristics and calculate the benefits from the different types of private pension funds.

Accessibility: Keyboard Navigation

57) How is Social Security different from a private defined benefit plan? When and why is Social Security projected to become insolvent?

Answer: Social Security is a "pay as you go" plan that has not been required to maintain fund reserves to meet expected future payouts the way that private defined benefit plans are. Social Security will be imperiled because longer life spans mean more payouts, fewer workers, and an increasing number of retirees as the population ages, which means that the plan will not generate sufficient revenue to meet planned payouts. According to current data and estimates, the plan began facing shortfalls in 2010 and will go bankrupt in 2034.

Difficulty: 2 Medium

Topic: Size, Structure, and Composition of the Industry; Financial Asset Investments and Recent Trends

Bloom's: Understand

AACSB: Reflective Thinking

Learning Goal: 18-04 Identify the different types of public pension funds.; 18-01 Describe the difference between a private pension fund and a public pension fund.

Accessibility: Keyboard Navigation

58) How sound is the PBGC? How much do firms pay for pension fund insurance? Describe President Bush's proposal to increase funding for PBGC.

Answer: In 2012 and 2013, underfunded pension liabilities for single-employer plans were $823 billion and $759 billion respectively, the largest up to those dates. As of 2016, the PBGC was responsible for the pensions of approximately 840,000 people from more than 4,700 failed single-employer plans. Some of the largest failures involved Sears, Alcoa, Alpha Natural Resources, and Computer Sciences Corp. The PBGC does not have the resources it needs and generally operates at a deficit. The Pension Protection Act of 2006 required an increase in premiums from $19 to $30 for fully funded plans and larger cost increases for underfunded plans tied to the amount of underfunding. As of 2018, premiums have been increased to $74 ($28) per participant for single-employer (multi-employer) plans. underfunded pension plans incur an additional variable charge of $38 per $1,000 of unfunded vested benefits. Disclosure to employees about the extent of the deficit is also required and firms are now required to reduce the underfunding over five years rather than over 20 years as was the case before the law.

Difficulty: 3 Hard

Topic: Regulation

Bloom's: Understand; Remember

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

59) What are the main provisions of ERISA?

Answer: Funding requirements for defined benefit plans; maximum time to vesting of benefits; prudent man rule established; transferability of pension credits from plan to plan; insurance provided by Pension Benefit Guarantee Corporation (PBGC).

Difficulty: 2 Medium

Topic: Regulation

Bloom's: Remember

AACSB: Reflective Thinking

Learning Goal: 18-05 Examine the main regulations governing pension funds.

Accessibility: Keyboard Navigation

60) How do public pension plans differ in other countries? Has privatization worked overseas?

Answer: In Europe, some countries do not have a strong link between the amount paid in and the benefit received, notably France and Germany, and their pension plans are having funding difficulty. Other countries like Italy, Britain, and Sweden have tied benefits more closely to contributions. Britain and Sweden have partially privatized their public pensions with some success. Chile has successfully privatized their pension program. Tying benefits to contributions and the trend toward privatization help keep spending down as a percent of GDP.

Difficulty: 2 Medium

Topic: Global Issues

Bloom's: Understand; Evaluate

AACSB: Reflective Thinking

Learning Goal: 18-06 Review the major issues for pension funds in the global markets.

Accessibility: Keyboard Navigation