Przykładowe zadania KWZ

Zad 1

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Zadanie | Nast. | min | med | max | śred | var | ES | EF |
| A | B,D | 2 | 5 | 11 | 5,5 | 2,25 | 0 | 5,5 |
| B | E,F | 3 | 3 | 12 | 4,5 | 2,25 | 5,5 | 10 |
| C | D, | 4 | 6 | 10 | 6,3 | 1 | 0 | 6,3 |
| D | E,G | 5 | 7 | 9 | 7 | 0,44 | 6,3 | 13,3 |
| E | F,G | 5 | 8 | 10 | 7,8 | 0,7 | 13,3 | 21,1 |
| F | - | 6 | 6 | 6 | 6 | 0 | 21,1 | 27,1 |
| G | - | 7 | 9 | 20 | 10,5 | 4,69 | 21,1 | 31,6 |

Scieżka krytyczna: C - D - E - G

D Wartość średnia długości = 31,6 wariancja=6,83, odchylenie=2,61

P(x<0,13) = 55%

P(D<35) =P(x<1,3) =

P(D<34)=P(x<0,92) =

|  |  |
| --- | --- |
| Długość | szansa |
| 32 | 55% |
| 34 | 82% |
| 35 | 90% |
| 37,6 | 99% |

Zadanie 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Decyzja | S1  P(S1) = 15% | S2  P(S2) =20% | S3  P(S3)=30% | S4  P(S4)=35% |
| D1 | 4 | 7 | 7 | 3 |
| D2 | 5 | 3 | 7 | 5 |
| D3 | 3 | 4 | 1 | 4 |

Jaka decyzja daje największy średni zysk:

Zysk( D1 ) = 5,15 Zysk(D2) = 5,2 Zysk(D3) = 2,95

Dla jaiej decyzji średni żal jest najmniejszy

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Decyzja | S1  P(S1) = 15% | S2  P(S2) =20% | S3  P(S3)=30% | S4  P(S4)=35% |
| D1 | 1 | 0 | 0 | 2 |
| D2 | 0 | 4 | 0 | 0 |
| D3 | 2 | 3 | 6 | 1 |

Średni Żal (D1) = 0,85

Średni Żal (D2) = 0,80

Średni Żal (D3) = 3,5

P( I | S )

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Czynnik | S1  P(S1) = 0.15 | S2  P(S2) =0.20 | S3  P(S3)=0.30 | S4  P(S4)=0.35 |
| I1 | 0.10=P(I1|S1) | 0.30 | 0.2 | 0.5 |
| I2 | 0.40 | 0.5 | 0.3 | 0.5 |
| I3 | 0.50 | 0.2 | 0.5 | 0 |

Jaka decyzja daje maksymalny zysk, przy założeniu wystąpienia czynnika I1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Czynnik | S1  P(S1) = 0.15 | S2  P(S2) =0.20 | S3  P(S3)=0.30 | S4  P(S4)=0.35 |
| I1 P(I1)=0.31 | 0.015=P(I1 & S1) | 0.060 | 0.060 | 0.175 |
| I2 | 0.060 | 0.100 | 0.090 | 0.175 |
| I3 | 0.075 | 0.040 | 0.150 | 0 |

P(S | I)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Czynnik | S1  P(S1) = 0.15 | S2  P(S2) =0.20 | S3  P(S3)=0.30 | S4  P(S4)=0.35 |
| I1 | 0,048 = P(S1|I1) | 0.1935 | 0.1935 | 0.5645 |
| I2 |  |  |  |  |
| I3 |  |  |  |  |

Dla I1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Decyzja | S1  P(S1) = 4,8% | S2  P(S2) =19,35% | S3  P(S3)=19,35% | S4  P(S4)=56.45% |
| D1 | 4 | 7 | 7 | 3 |
| D2 | 5 | 3 | 7 | 5 |
| D3 | 3 | 4 | 1 | 4 |

Średni zysk D1 = 4,59

Średni zysk D2 = 5

Średni zysk D2 = 3,37

Wyznacz luz operacji i scieżkę krytuczn

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Zadanie | Nast. | Czas | ES | EF | LS | LF | LUZ |
| A | B,D | 5 | 0 | 5 | 1 | 6 | 1 |
| B | E,F | 3 | 5 | 8 | 10 | 13 | 5 |
| C | D, | 6 | 0 | 6 | 0 | 6 | 0 |
| D | E,G | 7 | 6 | 13 | 6 | 13 | 0 |
| E | F,G | 8 | 13 | 21 | 13 | 21 | 0 |
| F | - | 6 | 21 | 27 | 24 | 30 | 3 |
| G | - | 9 | 21 | 30 | 21 | 30 | 0 |

Sceżka: C - D - E – G

Długość = 30