VEDI COPPIE DI ROBOT ?r1 ?r2 SE 1x1 o 2x1

PROBLEM 0\_5

| **Azione** | **Parametri** | **Combinazioni** |
| --- | --- | --- |
| move\_to\_crate | (?r robot, ?c crate, ?b base) | 2 x 1 x 1 = 2 |
| move\_back | (?c crate, ?b base, ?r robot) | 1 x 1 x 2 = 2 |
| pick\_up | (?c crate, ?r robot) | 1 x 2 = 2 |
| drop | (?b base, ?c crate, ?r robot) | 0 |
| drop\_A | (?b base, ?c crate, ?r robot) | 1 x 1 x 2 = 2 |
| drop\_B | (?b base, ?c crate, ?r robot) | 0 |
| move\_two\_robot\_to\_crate | (?r1, ?r2 robot, ?c crate, ?b base) | 1 x 2 x 1 = 1 |
| move\_back\_two\_robot | (?c crate, ?b base, ?r1, ?r2 robot) | 1 x 1 x 1 = 1 |
| move\_back\_two\_robot\_leggero | (?c crate, ?b base, ?r1, ?r2 robot) | 1 x 1 x 1 = 1 |
| pick\_up\_two\_robot | (?c crate, ?r1, ?r2 robot) | 2 x 1 = 2 |
| drop\_two\_robot | (?b base, ?c crate, ?r1, ?r2 robot) | 1 x 1 x 1 = 1 |
| drop\_two\_robot\_A | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 1 x 1 x 1 = 1 |
| drop\_two\_robot\_B | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 0 |
| charging | (?r robot, ?b base) | 2 x 1 = 2 |
| Grasp\_leggero | (?c - crate ?b - base ?ll - loader\_leggero) | 1 x 1 x 1 = 1 |
| grasp | (?c - crate ?b - base ?l - loader) | 2 x 1 x 1 = 2 |
| loading | ?l - loader ?c - crate ?b - base) | 1 x 2 x 1 = 2 |
| Loading\_fragile | (?l - loader ?c - crate ?b - base) | 0 |
| Loading\_leggero | (?ll loader\_leggero, ?c crate, ?b base) | 1 x 1 x 1 = 1 |
| Loading\_leggero\_fragile | (?ll, ?c crate, ?b base) | 0 |

Tot = 23

PROBLEM 1

| **Azione** | **Parametri** | **Combinazioni** |
| --- | --- | --- |
| move\_to\_crate | (?r robot, ?c crate, ?b base) | 2 x 1 x 1 = 2 |
| move\_back | (?c crate, ?b base, ?r robot) | 1 x 2 = 2 |
| pick\_up | (?c crate, ?r robot) | 1 x 2 = 2 |
| drop | (?b base, ?c crate, ?r robot) | 0 |
| drop\_A | (?b base, ?c crate, ?r robot) | 1 x 1 x 2 = 2 |
| drop\_B | (?b base, ?c crate, ?r robot) | 0 |
| move\_two\_robot\_to\_crate | (?r1, ?r2 robot, ?c crate, ?b base) | 1 x 3 x 1 = 3 |
| move\_back\_two\_robot | (?c crate, ?b base, ?r1, ?r2 robot) | 1 x 1 x 1 = 1 |
| move\_back\_two\_robot\_leggero | (?c crate, ?b base, ?r1, ?r2 robot) | 2 x 1 x1 = 2 |
| pick\_up\_two\_robot | (?c crate, ?r1, ?r2 robot) | 3 x 1 = 3 |
| drop\_two\_robot | (?b base, ?c crate, ?r1, ?r2 robot) | 1 x 1 x1 = 1 |
| drop\_two\_robot\_A | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 1 x 2 x 1 = 2 |
| drop\_two\_robot\_B | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 0 |
| charging | (?r robot, ?b base) | 2 |
| Grasp\_leggero | (?c - crate ?b - base ?ll - loader\_leggero) | 2 x 1 x 1 = 2 |
| grasp | (?c - crate ?b - base ?l - loader) | 3 x 1 = 2 |
| loading | ?l - loader ?c - crate ?b - base) | 1 x 2 x 1 = 2 |
| Loading\_fragile | (?l - loader ?c - crate ?b - base) | 1 |
| Loading\_leggero | (?ll loader\_leggero, ?c crate, ?b base) | 1 x 1 x 1 = 1 |
| Loading\_leggero\_fragile | (?ll, ?c crate, ?b base) | 1 x 1 x 1 = 1 |

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PROBLEM 2

| **Azione** | **Parametri** | **Combinazioni** |
| --- | --- | --- |
| move\_to\_crate | (?r robot, ?c crate, ?b base) | 2 x 2 = 4 |
| move\_back | (?c crate, ?b base, ?r robot) | 2 x 2 = 4 |
| move\_two\_robot\_to\_crate | (?r1, ?r2 robot, ?c crate, ?b base) | 1 x 4 x 1 = 4 |
| move\_back\_two\_robot | (?c crate, ?b base, ?r1, ?r2 robot) | 2 x 1 x 1 = 2 |
| move\_back\_two\_robot\_leggero | (?c crate, ?b base, ?r1, ?r2 robot) | 2 x 1 x 1 = 2 |
| pick\_up | (?c crate, ?r robot) | 2 x 2 = 4 |
| pick\_up\_two\_robot | (?c crate, ?r1, ?r2 robot) | 4 x 1 = 4 |
| drop | (?b base, ?c crate, ?r robot) | 0 |
| drop\_B | (?b base, ?c crate, ?r robot) | 1 x 2 x 2 = 4 |
| Drop\_A | (?b base, ?c crate, ?r robot) | 0 |
| drop\_two\_robot | (?b base, ?c crate, ?r1, ?r2 robot) | 0 |
| drop\_two\_robot\_A | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 1 x 2 x 1 = 2 |
| drop\_two\_robot\_B | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 1 x 2 x 1 = 2 |
| charging | (?r robot, ?b base) | 2 |
| Grasp\_leggero | (?c - crate ?b - base ?ll - loader\_leggero) | 2 x 1 x 1 = 2 |
| grasp | (?c - crate ?b - base ?l - loader) | 4 x 1 x 1 = 4 |
| loading | ?l - loader ?c - crate ?b - base) | 1 x 3 x 1 = 3 |
| Loading\_fragile | (?l - loader ?c - crate ?b - base) | 1 x 1 x 1 = 1 |
| Loading\_leggero | (?ll loader\_leggero, ?c crate, ?b base) | 1 x 2 x 1 = 2 |
| Loading\_leggero\_fragile | (?ll, ?c crate, ?b base) | 0 |

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PROBLEM 3

| **Azione** | **Parametri** | **Combinazioni** |
| --- | --- | --- |
| move\_to\_crate | (?r robot, ?c crate, ?b base) | 2 x 1 = 2 |
| move\_back | (?c crate, ?b base, ?r robot) | 1 x 2 = 2 |
| move\_two\_robot\_to\_crate | (?r1, ?r2 robot, ?c crate, ?b base) | 1 x 4 x 1 = 4 |
| move\_back\_two\_robot | (?c crate, ?b base, ?r1, ?r2 robot) | 3 x 1 x 1 = 3 |
| move\_back\_two\_robot\_leggero | (?c crate, ?b base, ?r1, ?r2 robot) | 1 x 1 x 1 = 1 |
| pick\_up | (?c crate, ?r robot) | 2 x 1 = 2 |
| pick\_up\_two\_robot | (?c crate, ?r1, ?r2 robot) | 4 x 1 = 4 |
| drop | (?b base, ?c crate, ?r robot) | 1 x 1 x 2 = 2 |
| drop\_B | (?b base, ?c crate, ?r robot) | 0 |
| Drop\_A | (?b base, ?c crate, ?r robot) | 0 |
| drop\_two\_robot | (?b base, ?c crate, ?r1, ?r2 robot) | 1 x 1 x 1 = 1 |
| drop\_two\_robot\_A | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 1 x 3 x 1 = 3 |
| drop\_two\_robot\_B | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 0 |
| charging | (?r robot, ?b base) | 2 |
| Grasp\_leggero | (?c - crate ?b - base ?ll - loader\_leggero) | 1 x 1 x1 = 1 |
| grasp | (?c - crate ?b - base ?l - loader) | 4 x 1 x 1 = 4 |
| loading | ?l - loader ?c - crate ?b - base) | 1 x 3 x 1 = 3 |
| Loading\_fragile | (?l - loader ?c - crate ?b - base) | 1 x 1 x 1 = 1 |
| Loading\_leggero | (?ll loader\_leggero, ?c crate, ?b base) | 1 x 1 x 1 = 1 |
| Loading\_leggero\_fragile | (?ll, ?c crate, ?b base) | 0 |

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PROBLEM 4

| **Azione** | **Parametri** | **Combinazioni** |
| --- | --- | --- |
| move\_to\_crate | (?r robot, ?c crate, ?b base) | 2 x 2 = 4 |
| move\_back | (?c crate, ?b base, ?r robot) | 2 x 2 = 4 |
| move\_two\_robot\_to\_crate | (?r1, ?r2 robot, ?c crate, ?b base) | 1 x 6 = 6 |
| move\_back\_two\_robot | (?c crate, ?b base, ?r1, ?r2 robot) | 0 |
| move\_back\_two\_robot\_leggero | (?c crate, ?b base, ?r1, ?r2 robot) | 6 x 1 x 1 = 6 |
| pick\_up | (?c crate, ?r robot) | 2 x 2 = 4 |
| pick\_up\_two\_robot | (?c crate, ?r1, ?r2 robot) | 6 x 1 = 6 |
| drop | (?b base, ?c crate, ?r robot) | 1 x 1 x 2 = 2 |
| drop\_B | (?b base, ?c crate, ?r robot) | 0 |
| Drop\_A | (?b base, ?c crate, ?r robot) | 1 x 1 x 2 = 2 |
| drop\_two\_robot | (?b base, ?c crate, ?r1, ?r2 robot) | 1 x 1 x 1 = 1 |
| drop\_two\_robot\_A | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 1 x 2 x 1 = 2 |
| drop\_two\_robot\_B | (?b - base ?c - crate ?r1 - robot ?r2 - robot) | 1 x 3 x 1 = 3 |
| charging | (?r robot, ?b base) | 2 |
| Grasp\_leggero | (?c - crate ?b - base ?ll - loader\_leggero) | 6 x 1 x 1 = 6 |
| grasp | (?c - crate ?b - base ?l - loader) | 6 x 1 x1 = 6 |
| loading | ?l - loader ?c - crate ?b - base) | 2 x 1 x 1 = 2 |
| Loading\_fragile | (?l - loader ?c - crate ?b - base) | 0 |
| Loading\_leggero | (?ll loader\_leggero, ?c crate, ?b base) | 2 x 1 x 1 = 2 |
| Loading\_leggero\_fragile | (?ll, ?c crate, ?b base) | 1 x 4 x 1 = 4 |

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