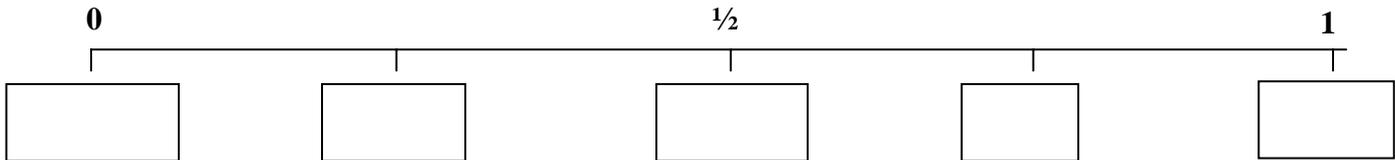




Probability and Odds Worksheet

The probability of occurrences of any event can be shown on the number line below. Locate the probability of each event described.



1. It will rain today.
2. Today is Saturday.
3. You are in Algebra class.
4. A coin will land tails up.
5. You will pass the next test.
6. You will go skiing tomorrow.

Find each probability if a die is rolled.

7. $P(3)$
8. $P(\text{even number})$
9. $P(\text{number less than } 1)$
10. $P(\text{a number divisible by } 4)$
11. $P(\text{a number greater than } 1)$

On questions 12 through 15, find the odds in favor of each outcome if a die is rolled.

12. A number greater than 3
13. A multiple of 2
14. Not a 4
15. A number divisible by 3
16. If the probability of an event occurring is $\frac{2}{3}$, what are the odds of the event occurring?
17. If the probability of an event occurring is $\frac{3}{7}$, what are the odds that it will not occur?

18. If the odds in favor of an event occurring are 7:5, what is the probability of the event occurring?
19. If the odds against an event occurring are 9:14, what is the probability of the event occurring?

The number of males and females enrolled in Blue Dolphin High School are listed per class in the table below. Use this table to answer questions 20 through 23.

20. If a student is chosen at random, what is the probability that the student is a female?
21. If a student is chosen at random, what is the probability that the student is a male in Grade 11?

Blue Dolphin High School		
Grade	Male	Female
9	120	150
10	100	100
11	130	110
12	150	175

22. If one student is chosen to represent the student body, what are the odds in favor of selecting a female?
23. If one student is chosen from Grade 12, which is more likely, selecting a male or selecting a female?

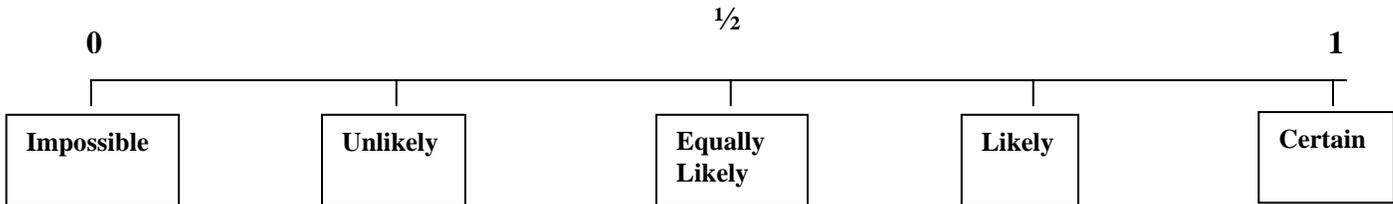
A card is selected at random from a deck of 52 cards.

24. What are the odds in favor of selecting a heart?
25. What is the probability of selecting an ace?



Probability and Odds Worksheet Key

The probability of occurrences of any event can be shown on the number line below. Locate the probability of each event described.



1. It will rain today.
2. Today is Saturday.
3. You are in Algebra class.
4. A coin will land tails up.
5. You will pass the next test.
6. You will go skiing tomorrow.

Answers will vary for Exercises 1, 2, 5, and 6.

3 – 1 if in Algebra class, 0 if not in Algebra.

4 – one-half

Find each probability if a die is rolled.

7. $P(3) \rightarrow \frac{1}{6}$

8. $P(\text{even number}) \rightarrow \frac{1}{2}$

9. $P(\text{number less than 1}) \rightarrow 0$

10. $P(\text{a number divisible by 4}) \rightarrow \frac{1}{6}$

11. $P(\text{a number greater than 1}) \rightarrow \frac{5}{6}$

On questions 12 through 15, find the odds in favor of each outcome if a die is rolled.

12. A number greater than 3 → 1:1

13. A multiple of 2 → 1:1

14. Not a 4 → 5:1

15. A number divisible by 3 → 1:2

16. If the probability of an event occurring is $\frac{2}{3}$, what are the odds of the event occurring? → 2:1

$\frac{2}{3}$ means two successes out of three possible ways. Therefore, there can only be one failure.

17. If the probability of an event occurring is $\frac{3}{7}$, what are the odds that it will not occur? → 4:3

$\frac{3}{7}$ means three successes out of 7 possible ways. Therefore, there can be only 4 failures.

18. If the odds in favor of an event occurring are 7:5, what is the probability of the event occurring? → $\frac{7}{12}$

7:5 means 7 successes and 5 failures for a total of 12 outcomes.

19. If the odds against an event occurring are 9:14, what is the probability of the event occurring? $\rightarrow \frac{14}{23}$

9:14 means 9 failures and 14 successes for a total of 23 outcomes.

The number of males and females enrolled in Blue Dolphin High School are listed per class in the table below. Use this table to answer questions 20 through 23.

20. If a student is chosen at random, what is the probability that the student is a female?

535 female students, 500 male students

1035 total students $\rightarrow \frac{535}{1035} = \frac{107}{207}$

Blue Dolphin High School		
Grade	Male	Female
9	120	150
10	100	100
11	130	110
12	150	175

21. If a student is chosen at random, what is the probability that the student is a male in Grade 11?

130 male students in grade 11

1035 total students $\rightarrow \frac{130}{1035} = \frac{26}{207}$

22. If one student is chosen to represent the student body, what are the odds in favor of selecting a female?

535 female students, 500 male students

or 107 female students to every 100 male students

\rightarrow 107:100

23. If one student is chosen from Grade 12, which is more likely, selecting a male or selecting a female?

There are more female (175) students than male students (150) in the 12th grade. Therefore, it is more likely to choose a female.

A card is selected at random from a deck of 52 cards.

24. What are the odds in favor of selecting a heart?

There are 13 hearts and 39 nonhearts.

13:39 or 1:3

25. What is the probability of selecting an ace?

There are 4 aces and a total of 52 cards.

$$\frac{4}{52} = \frac{1}{13}$$