

5. Money Talk



5.1. Site Commissions (aka Rake)

By Dan Hindery

The standard commission at FanDuel is 10% for Head-To-Head contests with entry fees of \$50 or lower. For example, in a \$50 Head-To-Head matchup, the winner receives \$90 with a commission of \$10 (10%). As entry fees increase, FanDuel reduces the percentage of the commission. For example, in a \$109 Head-To-Head or 50/50 contest, the winner receives \$200 and the commission is \$18 (8.3%). A \$270 Head-To-Head pays out \$500 with a commission of \$40 (7.4%). At the \$1,065 entry level, the commission decreases to 6.1%, and at the \$5,300 entry fee level, the commission is only 5.7%.



The standard commission at FanDuel for large guaranteed 50/50 contests with entry fees of \$25 or less is 12.0%. A \$10 entry fee 50/50 with 2,840 entries pays out \$25,000 with a commission of \$3,400 (12.0%). Unguaranteed 50/50 contests on FanDuel have the same payout structure as Head-To-Head contests with the standard rate of 10% commission on smaller entry fee contests and decreasing percentages as the entry fee rises.

The commission in guaranteed prize pool contests on FanDuel also decreases as the entry fee increases. The standard commission on GPPs with entry fees of \$25 or less is 13.0%. For example, a \$25 entry fee contest with 12,643 entries pays out \$275,000 with a commission of \$41,075 (13.0%). In a GPP with an entry fee of \$200 with 694 entries and a payout of \$125,000, the commission decreases to 9.9%. Of course, if these GPP contests do not reach the maximum number of entries, the result is a lower commission. If few enough enter, overlays are possible (which is essentially a negative commission).

5.2. Overlays

By Justin Bonnema

An overlay, as it pertains to DFS, occurs when a site hosts a contest with a guaranteed prize pool (GPP) but fails to fill that contest with enough entrants to cover its cost. For example, if a tournament has a buy-in of \$5 and guarantees a payout of \$5,000, it needs at least 1,000 entries to break even. If the site falls short of that expectation, the contest results in an overlay. As players, we want to target these situations since, with an overlay, even a merely average player will have a positive expectation.

How, when, and where to find these opportunities is a matter of contest scouting. Contest scouting, when part of your Sunday morning routine, can easily generate low-risk investments. The process is simple: Go to the FanDuel lobby, select Tournaments, and sort them by the number of entries. When you identify contests with low entry numbers relative to allowed entries (shown as 1290/3500, for example), open them as separate tabs in your browser and program your lineup as a temporary placeholder.

The best time to begin this process is about 30 minutes to an hour before rosters lock. By this point most injury situations are cleared up—or become as clear as they’re going to get—and it is unlikely any major news is going to disrupt the rosters we’ve spent hours building.

Commitment is a key ingredient. Know your lineups before even beginning your scouting process. The last thing you want is to still be flopping between players and miss an opportunity. Have your lineups ready to fire, so if you see an under-filled contest with a guaranteed prize pool, you can quickly select the players you want and submit your lineup before rosters lock.

Patience is important. It’s easy to get carried away hunting overlays and mistakenly enter a bunch of lineups over a few contests only to see those contests fill up at the last minute. You want to wait as long as possible before submitting. You also need to show discipline. Don’t get suckered into overcommitting your bankroll just because you found a bunch of tournaments that are “only” 80% full.

If you’re diligent and disciplined, contest-scouting minutes before the closing bell provides an easy path to positive expected value.

Beyond banking on a contest overlaying with time left on the clock, it’s worth noting that we shouldn’t be entering contests just because there is overlay. Sure, having better odds is nice, but you won’t win without a good lineup. This is more important to remember in lineups that fully lock when the first game starts (like FanDuel contests), but it’s just general good practice—don’t enter contests just for the sake of entering them. —Alessandro Miglio

5.3. Bankroll management

By Maurile Tremblay

Bankroll management will mean different things to different types of players.

Many players play fantasy sports, including DFS, only as a hobby. Ideally, they bet only what they can afford to spend on entertainment—just as someone who skis for a hobby will spend only what she can afford on lift tickets—and any winnings will just be a happy bonus.

Some players play DFS for a living. For them, bankroll management is of utmost importance. They must bet an amount each week that takes into account their expected return (the more of their bankroll they bet each week, the more money they can make), but is appropriately balanced against their risk of ruin (the more of their bankroll they bet each week, the more likely they are to go broke). For full-time professionals, winnings are not merely a bonus. They are rent, car insurance, and food. A professional will need to take a generally-somewhat-fixed amount out of his bankroll each month in order to meet living expenses.

A player's bankroll is not simply what he has currently on deposit in his DFS accounts. For either the hobbyist or the professional, we'll define his bankroll as the amount of money he has set aside to wager in DFS contests, such that if he lost that amount, he'd be unable to place any more bets until he finds an outside source of additional cash—a paycheck from another job, a loan or funding arrangement with a backer, etc.



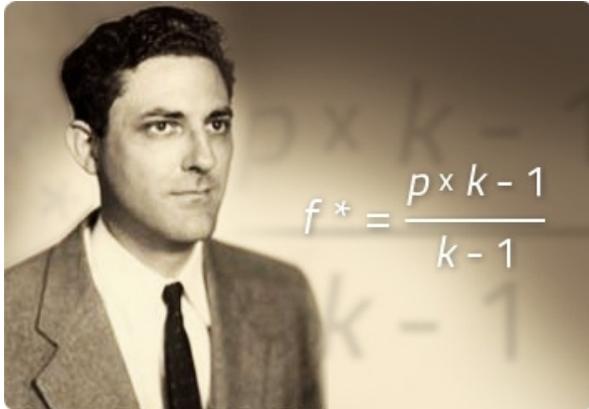
Now that we've defined *bankroll*, we need to define *risk of ruin*. It's what it sounds like—it's the chance that a player will go broke over a given number of bets.

Sound bankroll management means increasing our bankroll by the greatest amount possible over the long run. This necessarily means taking our risk of ruin into account, and here's why.

Suppose we have \$100 to wager on a coin flip. Heads, we double our amount wagered; tails, we lose our amount wagered. How do we maximize our expected return if the coin is fair? We can't. Whether we bet 0%, 32%, 71%, 100%, or any other percentage of our bankroll, our expected return will always be zero dollars, because the amount we win when victorious is exactly equal to the amount we lose when defeated, and we'll win half the time.

But now suppose that it's a weighted coin that comes up heads 60% of the time. Now how do we maximize our expected return, measured in dollars, on a given bet? It should be obvious that the answer is by betting 100% of our bankroll. When we bet \$100, we expect to win \$20 on

average. (Suppose we play five times, winning \$100 three times and losing \$100 twice, for a net gain of \$100. A gain of \$100 over five flips is \$20 per flip.) Any other amount will produce a lesser return: if we bet \$50, for example, we will win only \$10 on average.



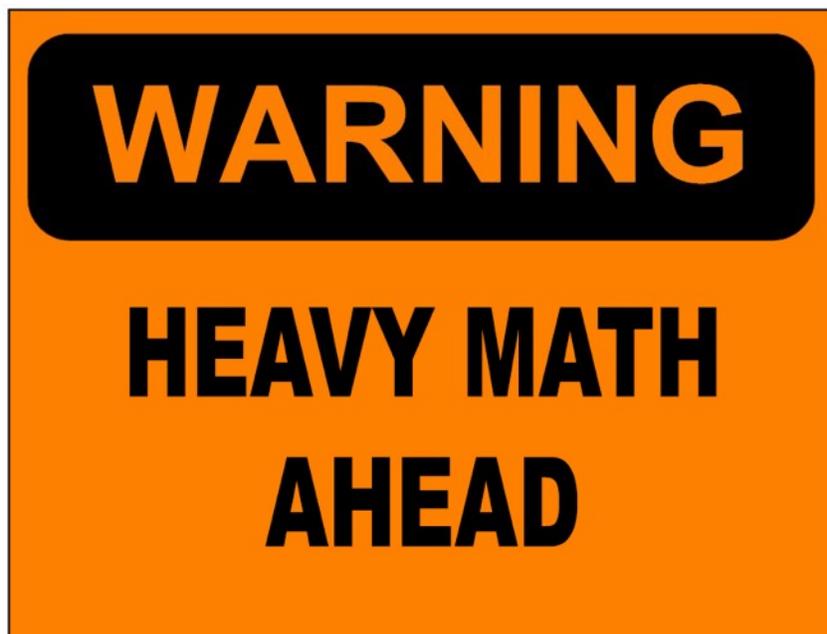
If we are allowed to play any game only a single time, and if we have a positive expectation in that game, we maximize our expected return by betting 100% of our bankroll.

But now suppose that we are allowed to play the game more than once. Suppose we are allowed to play as many times as we want unless and until we go broke. Do we still maximize our expected return by betting 100% of our bankroll?

No, we don't. If we bet 100% of our bankroll on the first trial, there's a 40% chance that we'll go broke. Then we'll have to sit on the sidelines for the rest of our lives winning \$0 while we watch our friends continue to make money in this positive-expectation game. Going broke is terrible because it deprives us of the opportunity to keep wagering, and to keep making money (on average).

That's why we have to balance two competing interests: we want to maximize our expected return in a given trial, but we also want to minimize our risk of ruin. We can't do both at once, it turns out, so we need to find an appropriate compromise.

This is where the Kelly Criterion comes in.



According to the Kelly Criterion, the percentage of our bankroll that we should bet in a given contest is equal to $(bp - q)/b$, where b is the net odds we are being offered (e.g., 1-1 in an even-money contest, or 2-1 in a fair-odds game that we will win only 33% of the time), p is the probability of winning, and q is the probability of losing. (Since we ignore pushes, $q = 1 - p$.)

For these purposes, odds are reduced to a value such that odds of X-Y, often written X:Y, have a value of X/Y. So odds of 1-1 have a value of 1, odds of 2-1 have a value of 2, odds of 3-2 have a value of 1.5, odds of 2-3 have a value of 0.667, and so on. Note that when the first number is greater than the second (e.g., 3-2), we are talking about an underdog. When the first number is smaller than the second (e.g., 2-3), we are talking about a favorite—i.e., an event that is more than 50% likely.

The Kelly Criterion originally comes from the world of finance, but it is just as useful in any type of wagering situation. Betting using the Kelly Criterion maximizes our median bankroll over the long run.

Let's return to the example above, where we have \$100 to start with and can bet as many times as we want (until we go broke) on a coin flip that will land on heads 60% of the time. It turns out that we will maximize our long-run rate of return by always betting 20% of our current bankroll. (See Kelly Criterion formula above.) So our first bet will be just \$20, well short of the \$100 we'd bet if we were trying to maximize our return on only a single wager.

This is a special case of the Kelly Criterion: in any game that pays even odds, the percentage of your bankroll that you wager should be equal to your advantage in the game. When we win 60% of the time and lose 40% of the time, we have an advantage of 20%, and should therefore bet 20% of our bankroll on each trial.

$$(1 * 0.6 - 0.4) / 1 = 0.2$$

If the game changes such that heads occurs only 55% of the time, we should bet 10% of our bankroll on each trial.

$$(1 * 0.55 - 0.45) / 1 = 0.1$$

If heads occurs 51.5% of the time, we should bet 3% of our bankroll on each trial.

$$(1 * 0.515 - 0.485) / 1 = 0.03$$

And here we have our first application to DFS—specifically to Double Up contests. In a Double Up, the game pays even odds. Whatever your entry fee is, that's how much you win on net when victorious, and it's also how much you lose when defeated. So if you know what percentage of the time you expect to finish in the money in a Double Up, you also know what percentage of your bankroll you should bet on each independent contest. Just double the amount by which it's over 50%.

Notice that I said in each *independent* contest. Different DFS contests are not always independent of each other. To take an extreme example, suppose you enter the same lineup in 20 different large Double Ups in some particular week. Suppose you believe, based on your track record, that you have a 54% chance of finishing in the money in each contest, apparently justifying an investment of 8% of your bankroll in a given contest.

$$(1 * 0.54 - 0.46) / 1 = 0.08$$

If the contests were independent of each other, you'd expect to win around 11 of them in a typical week. But in fact, in this example, you are usually going to win either 20 of them or 0 of them. You will hardly ever win anything like 11 of them. If your lineup is awesome in the first contest, it will be awesome in the others as well—*because it's the same lineup*. Therefore, you do not want to enter 8% of your bankroll on each individual contest; rather, you want to enter 8% of your bankroll total in all such contests.

If multiple even-money contests with 54% success rates are truly independent of each other (say, you are entering two contests—one for 1 p.m. games only and another for 4 p.m. games only) then you can spend 8% of your bankroll on each of them, for 16% total. But the more that the two rosters overlap with each other, the more you'll have to drop down from 16% total toward 8% total. By the same token, the less the two rosters overlap, the more you'll be able to move up from 8% total toward 16% total.

Also be sure to keep in mind the direct correlation between skill level and price of contest. Contests with higher entry fees and bigger prize pools attract stiffer competition. This is why bankroll management and game selection go hand-in-hand. You not only want to play contests that match your bankroll requirements, but you also want to maximize your chances of winning by playing contests aligning with your skill level. There is no shame in playing 20 \$1 contests instead of one \$20 contest. Ego hurts too many players' ROI. Consistently finding success is not a sprint, but rather a marathon. The easiest way to win \$10,000 is to first win \$1,000.

Moving on to other contests besides Double Ups...

Suppose we play a 50/50. It's easier to finish in the money in a 50/50 than in a Double Up, but we don't get paid as much when we do. In a standard 50/50 where we wager \$10 to win \$8, suppose we can expect to win 60% of the time (compared to 54% in a Double Up—giving us a 20% advantage over the average player in each case). Plugging the numbers into our Kelly formula, we'd be justified in wagering 10% of our bankroll in such a contest. So with the same 20% advantage in a 50/50 as in a Double Up, we're justified in wagering more money in the 50/50 (10% of our bankroll as opposed to 8%).

Let's go to the other extreme and consider some GPPs with top-heavy payouts.

Let's first consider a contest with 100 entries that pays the top 30 spots. The average player has a 30% chance of finishing in the money, but in keeping with our 20% advantage, let's assume we have a 36% chance of finishing in the money (since $30\% * 1.2 = 36\%$). If we pay a \$10 entry fee, and the top 30 spots get paid, the average winner will net \$20. (The \$1,000 in entry fees, after the commission, will constitute a \$900 prize pool. That \$900 will be spread over 30 winners, so the mean win will be \$30, which is a net win of \$20 over the entry fee.) That means the average winner is getting 2-1 odds.

$$(\$30 - \$10) / \$10 = 2$$

Plugging all of that into the Kelly formula, we should wager 4% of our bankroll in this sort of contest.

$$(2 * 0.36 - 0.64) / 2 = 0.04$$

That's about half as much as we'd enter in a Double Up with a similar advantage.

Let's go all the way to the extreme and consider a \$10 winner-take-all contest with 100 entries. The average player has a 1% chance of winning. In keeping with our 20% advantage, that gives us a 1.2% chance of winning. If we win, we get paid \$900 (after the \$100 commission) for a net of \$890. So we're getting odds of 89-1. Plugging those numbers into the Kelly formula, we should wager only 0.0009% of our bankroll in this contest.

How do you know whether your advantage over the field is 0%, 10%, 20%, or something else? That's a tricky subject in itself. If you have a long history of playing DFS football, and if you've kept good records, your ROI in cash games would be the most telling clue. (Tournament results are less probative because of the higher variance.) Except that (a) none of us has a long enough history at this relatively new style of fantasy football to be confident in a precise estimate of our advantage, and anyway (b) the quality of the overall field is always changing, so solid track results in the past do not guarantee a current edge. (Similarly, poor results in the past do not mean that you haven't gained ground.)

Acknowledging that there is guesswork involved, my guess is that if you work your way through this book and use a solid set of projections and lineup-construction tools—whether your own, ours, or someone else's—it is not unrealistic to gain about 12% edge over the field without much in the way of previous DFS experience. (A 12% edge would mean being expected to cash 56% of the time in 50/50s.) As you continue to play, think about the game, and improve, your edge should grow. Keep stats as you play, and if you're cashing in fewer than 56% of your 50/50s, adjust your estimate downward. If you're cashing in more than 56% of your 50/50s, adjust your estimate upward. If you already have a solid track record, you may have reason to believe that you have a larger edge. Whatever your current estimate of your edge is, be willing to adjust it upwards or downwards based on your most recent results. Be honest with yourself, though, and don't succumb to the temptation to believe that your wins are due to great skill while your losses are due to bad luck.

So let's recap what we've learned.

1. Going broke is bad, so don't wager your whole bankroll, or anything close to it, on a single contest.
2. The bigger advantage you have in a contest, the more of your bankroll you can wager on it. If you have a 10% edge, you can wager twice as much as if you have a 5% edge.
3. If you are entering multiple contests, you can increase the total amount you wager only to the extent that the different contests are independent of each other. If your roster overlap is zero, go ahead and bet twice as much (total) on two contests as you'd bet on one contest. But if your roster overlap is total, you should bet the same amount (total) on two contests as you'd bet on one—so half as much per contest. If your roster overlap is partial, bet somewhere in between. (This is a bit of an oversimplification. Contests are not completely independent just because there is no roster overlap if the rosters were made using the same set of projections. But it's probably close enough for our purposes.)
4. Holding your advantage over the field constant, you can wager more in contests that pay out a larger percentage of the field. If you have a 20% edge over the average player, for example, you'd be justified in betting 10% of your bankroll in a 50/50 or head-to-head contest that pays 50% of the entrants, 8% of your bankroll in a Double Up that pays 45% of the entrants, 4% of your bankroll in a league or tournament that pays 30% of the entrants, and just 0.0009% of your bankroll in a winner-take-all that pays 1% of the entrants.
5. As a rough approximation, for any specified amount you intend to wager in a given week, a decent rule of thumb is to put about 80% of it into cash games and about 20% into tournaments.



Be sure to keep track of your investment.

The following charts show the percentage of bankroll you should put into play in each independent contest according to the Kelly Criterion, given the specified advantage you have over the field.

With a 10% edge over the field or less:

contest type	players	entry	prize pool	winners	% of bankroll
H2H	2	10	18	1	0.00%
50/50	100	10	900	50	0.00%
Double Up	100	10	900	45	0.00%
Tournament	100	10	900	30	0.00%
Winner-Take-All	100	10	900	1	0.00%

(Those are not typos. If you have a 10% edge in a head-to-head contest, for example, you will win 55% of the time while your opponent wins 45% of the time. But if you win only 55% of the time, you are failing to beat the rake, which means that you will lose money on average, so your optimal wager is zero.)

With a 15% edge over the field:

contest type	players	Entry	prize pool	winners	% of bankroll
H2H	2	10	18	1	4.37%
50/50	100	10	900	50	4.37%
Double Up	100	10	900	45	3.50%
Tournament	100	10	900	30	1.75%
Winner-Take-All	100	10	900	1	0.04%

With a 17.5% edge over the field:

contest type	players	entry	prize pool	winners	% of bankroll
H2H	2	10	18	1	7.19%
50/50	100	10	900	50	7.19%
Double Up	100	10	900	45	5.75%
Tournament	100	10	900	30	2.88%
Winner-Take-All	100	10	900	1	0.06%

With a 20% edge over the field:

contest type	players	entry	prize pool	winners	% of bankroll
H2H	2	10	18	1	10.00%
50/50	100	10	900	50	10.00%
Double Up	100	10	900	45	8.00%
Tournament	100	10	900	30	4.00%
Winner-Take-All	100	10	900	1	0.09%

With a 22.5% edge over the field:

contest type	players	entry	prize pool	winners	% of bankroll
H2H	2	10	18	1	12.81%
50/50	100	10	900	50	12.81%
Double Up	100	10	900	45	10.25%
Tournament	100	10	900	30	5.13%
Winner-Take-All	100	10	900	1	0.12%

I believe records and stat-keeping to be the most underrated aspects of bankroll management, especially for beginners.

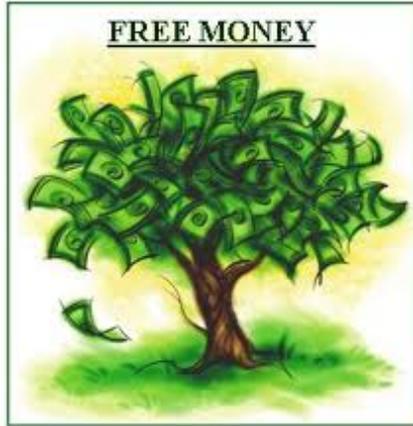
A large part of record-keeping is being proactive. This means planning out your week ahead of time, and in many cases having at least a bi-weekly plan. Keep track of the type of contest, the buy-in, the number of players and (+/-) profit. This also goes hand in hand with game selection, as you should be browsing the contests ahead of time and then coming up with a plan for that week.

Record-keeping is also the best way to be impartial on when you should be moving up and down stakes. —BJ VanderWoude

You can download a free "Bankroll Tracker" spreadsheet for Microsoft Excel from RotoGrinders.

5.4. Free Play Contests

By Mark Wimer



In a dream scenario, all contests would be free and award large prizes for winning (or even just for playing). How it usually works is DFS sites like FanDuel generate their revenue through commissions on paid contests. But free play contests are exceptions, don't have entry fees, and are essentially giveaways for the sites. They chalk it up to marketing costs.

Free play contests exist as a risk-free way for new players to gain experience and as a reward to regular players. FanDuel offers free play contests at various times with various formats, and partner sites, like Footballguys, sometimes have special links to free play contests.

When you play paid contests on FanDuel, you will begin to accrue FanDuel Points (or FDPs), which allow access to the following monthly free play contests:

- Bronze: \$2,000 free play contest, requires 1,000 FDP earned in a month
- Silver: \$3,000 free play contest, requires 5,000 FDP earned in a month
- Gold: \$5,000 free play contest, requires 15,000 FDP earned in a month
- Platinum: \$8,000 free play contest, requires 50,000 FDP earned in a month

You do not have to spend FDPs to enter these contests, and you can enter all of the contests for which you qualify. For example, if you earn 16,000 FDPs in a calendar month, you can enter the Bronze, Silver, and Gold contests.

The simplest way to find free play contests is to enter the lobby, click the NFL Tournaments tab, and slide the max entry fee button all the way to the left so the entry range shows \$0 min to \$0 max. And FanDuel usually sends a reminder email when you qualify for an FDP-related free play contest.

In addition to free play contests, FanDuel also allows players to play in free contests. Although these free games do not offer prizes like free play contests do, they do allow players to earn valuable experience without risking money to gain that experience. If you are playing on a limited bankroll, I would highly recommend you try some of the strategies in this book in these free contests. You can compare your scores to those who succeeded in real-money games. Then, if you find there is a specific type of strategy you excel at, you can take the plunge and focus on using those specific strategies in paid entry games. —Steve Buzzard

5.5. Bonuses

By Will Grant

FanDuel has revamped their deposit bonus structure for the 2016 NFL season. The new deposit bonus plan is called The FanDuel 5-Pack. The 5-Pack is awarded to new users who create an account and deposit at least \$10. It gives the new owner five free entries into NFL 50/50 contests. The value of the contests is based on the deposit amount:

- Deposit \$10 - \$24.99 and receive 5 free \$0.25 entries into NFL 50/50 Contests
- Deposit \$25 - \$99.99 and receive 5 free \$1 entries into NFL 50/50 Contests
- Deposit \$100 - \$199.99 and receive 5 free \$5 entries into NFL 50/50 Contests
- Deposit \$200 or more and receive 5 free \$10 entries into NFL 50/50 Contests

These 50/50 contests will be offered every week of the season, so if you join after a couple weeks, you'll still be able to get the 5-Pack deposit bonus.

The contests will be awarded at a rate of one per week. Each week an email will come to your inbox with a link to the free entry. Per FanDuel rules, you must use all five entries within the first 35 days after deposit. Be sure to look for those emails and don't miss any weeks.



Note: Some deposit bonuses under the old system did not have an expiration date, so if you received a deposit bonus before the 5-Pack change, you may still have some left. Check with FanDuel Support if you have questions about an old deposit bonus.

5.6. Referrals and Player Points

By Austin Lee and Kyle Wachtel

On all daily fantasy sites, you must read the fine print, asterisks, and legalese to get the real lowdown on referral bonuses and player rewards. It's all subject to change, but we've boiled it down to the current, quick version to get you started and let you know what to expect.

5.6.1. FanDuel referral bonuses

FanDuel gives both you and your referral a \$10 bonus once the new player enters \$20 worth of contests. The \$10 bonus can be applied to entry fees and must be played through before withdrawal. When logged in, you'll find the Referral Center link under the My Account tab.

There are a few different ways to refer friends. You can enter their emails in the Referral Center to send them your referral link, or you can copy, paste, and send your referral link to them directly through any form of messaging. Be sure to give them your username as well. When they join, it may be easiest for them to click the "Got a Promo Code or Referral Username?" link and simply enter your username.

5.6.2. FanDuel Points

Another way to get freebies is to earn and redeem FanDuel Points, which are also known as FDP. For every dollar in entry fees, users are awarded 10 FDP. Users are then able to use FDP to enter paid contests in lieu of money at the conversion rate of 2,400 FDP per dollar. Put another way, you'll earn a free dollar for every \$240 you spend. The option to switch from cash entry to paying with FDP is next to the "Enter" button on the contest page where you pick your initial lineup prior to entering.

As an added bonus, FanDuel rewards its players with the following tiered monthly free play contests based on the amount of FDP you accrue each month:

- 1,000 FDP for entry into the Bronze free play contest
- 5,000 FDP for entry into the Silver free play contest
- 15,000 FDP for entry into the Gold free play contest
- 50,000 FDP for entry into the Platinum free play contest

Users are able to enter into all of the free play contests they qualify for, and those free play contests normally take place within the first 10 days of the following month. You'll be able to find them in the FanDuel lobby, and an email will be sent providing links to the free play contests you qualify for.