## Ultimate HDTV buying guide

Whether you want a new bedroom set or a massive home-theater centerpiece, our CNET editors’ guide gives you the full picture on shopping for a new TV. To sort TVs in CNET's database by price range, [check out this list](http://www.cnet.com/4520-7874_1-5108580-9.html?tag=print (1 of 12)2/17/2007 11:17:33 AM).

### Your budget range

#### Pricing parameters

Televisions are expensive beasts, but they fall into a few distinct price categories. Here's a cheat sheet that'll help better align the set of your dreams with the reality of your bank account. Note that these prices reflect the latest street/online price as of this writing.

<table>
<thead>
<tr>
<th>What you'll pay</th>
<th>What you'll get</th>
</tr>
</thead>
</table>
| **Less than $300** | **Curved tubes**: up to 32 inches  
**Flat tubes**: up to 27 inches  
**Flat-panel LCD**: up to 20 inches |
| **$300 to $500** | **Curved tubes**: up to 36 inches  
**Flat tubes**: up to 32 inches  
**Flat-panel LCD**: up to 20 inches |
| **$500 to $750** | **Flat tubes**: up to 36 inches  
**Flat-panel LCD**: up to 30 inches  
**CRT rear-projection**: up to 46 inches |
| **$750 to $1,000** | **Wide-screen HDTV tubes**: 34 inches  
**Flat-panel LCD**: up to 32 inches  
**CRT rear-projection**: up to 51 inches  
**DLP rear-projection**: 43 inches |
| **$1,000 to $1,500** | **Flat-panel LCD**: up to 37 inches  
**CRT rear-projection**: up to 61 inches  
**LCD rear-projection**: up to 60 inches  
**DLP rear-projection**: up to 56 inches  
**Plasma**: up to 42 inches |
**Size up your screen**

After you have your budget squared away, you need to decide how large of a screen you want. Usually, the largest screens cost the most, but regardless, the TV should deliver the right-size picture for where you'll sit relative to the screen. Sitting closer to a smaller TV means you won't have to spend as much on a big screen. But if you sit too close, the picture will look poor. See the charts below for recommended seating distances per screen size for both 4:3 and wide-screen TVs, then consult our handy tool to find TVs in our database by diagonal screen size.

**Regular TV-viewing distances**

Most viewers feel comfortable sitting away from the set at a distance that's between three and six times the width of the screen. The following chart can give you a rough estimate of the minimum and maximum viewing distances for regular 4:3 televisions.

<table>
<thead>
<tr>
<th>4:3 TV diagonal screen size (in feet)</th>
<th>4:3 Min. viewing distance (in feet)</th>
<th>Min. viewing distance (in feet)</th>
<th>4:3 Max. viewing distance (in feet)</th>
<th>Max. viewing distance (in feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>2.6</td>
<td>2.6</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>19</td>
<td>3.8</td>
<td>3.8</td>
<td>7.6</td>
<td>7.6</td>
</tr>
<tr>
<td>20</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>24</td>
<td>4.8</td>
<td>4.8</td>
<td>9.6</td>
<td>9.6</td>
</tr>
<tr>
<td>27</td>
<td>5.4</td>
<td>5.4</td>
<td>10.8</td>
<td>10.8</td>
</tr>
<tr>
<td>32</td>
<td>6.4</td>
<td>6.4</td>
<td>12.8</td>
<td>12.8</td>
</tr>
<tr>
<td>36</td>
<td>7.2</td>
<td>7.2</td>
<td>14.8</td>
<td>14.8</td>
</tr>
<tr>
<td>40</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

**Wide-screen TV-viewing distances**

You'll notice that we said regular televisions. Wide-screen televisions showing high-resolution DVD and HDTV look better than regular sets, allowing you to sit closer and experience a more immersive, theaterlike picture.

With wide-screen sets showing DVD or HDTV, you can sit as close as 1.5 times the screen's diagonal measurement and still not notice much of a loss in quality, while sitting farther away than three times the screen size means you're likely to miss out on the immersive feel. Here's a rundown of minimum and maximum
Recommended viewing distances for wide-screen sets.

<table>
<thead>
<tr>
<th>16:9 TV diagonal screen size</th>
<th>Min. viewing distance (in feet)</th>
<th>Max. viewing distance (in feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>3.3</td>
<td>6.5</td>
</tr>
<tr>
<td>30</td>
<td>3.8</td>
<td>7.6</td>
</tr>
<tr>
<td>34</td>
<td>4.3</td>
<td>8.5</td>
</tr>
<tr>
<td>42</td>
<td>5.3</td>
<td>10.5</td>
</tr>
<tr>
<td>47</td>
<td>5.9</td>
<td>11.8</td>
</tr>
<tr>
<td>50</td>
<td>6.3</td>
<td>12.5</td>
</tr>
<tr>
<td>55</td>
<td>6.9</td>
<td>12.8</td>
</tr>
<tr>
<td>60</td>
<td>7.5</td>
<td>15</td>
</tr>
<tr>
<td>65</td>
<td>8.1</td>
<td>16.2</td>
</tr>
</tbody>
</table>

Size and your room
Generally, 30-inch and smaller sets are great for bedrooms or guest rooms but too small for the main living room. Sets with bigger screens are large enough for the whole family to enjoy and will probably be too much for most small bedrooms. Remember that tube TVs are also fairly deep and get bulkier as the screen size increases. You'll want to pick out a deep-enough spot for the TV so that it doesn't protrude awkwardly into the room.

If you're mounting the set inside an entertainment center, be sure it fits in every dimension; also, leave an inch or two on all sides so that the TV has enough ventilation. If you're getting a bigger set, you may want to consider a dedicated stand; many TV makers sell matching stands that increase the aesthetic appeal of their hefty boxes.

Screen sizes and display types
Most tube televisions have screens that measure between 13 and 36 inches diagonally. Above that, TVs switch from standard tubes to rear-projection or flat-panel models. Flat-panel LCDs can range anywhere from 5 inches to more than 40 inches diagonal, plasmas are between 37 and 65 inches, and rear-projection sets start at 42 inches and go to as large as 73 inches. These different TV types have their own strengths and drawbacks, which we detail in "CNET's quick guide to TV types."

HDTV boot camp
Since the first HDTVs appeared in 1998, high-definition television has been on the mind of every TV buyer. The big question is whether now is the time to pay a few hundred to a few thousand dollars more and take the plunge on an HDTV set. We can't answer that question for you, but we can provide some basic information that may help you decide. But first, if you're completely new to HDTV, you may want to check out HDTV 101: A beginner's guide.

Analog, digital, and HDTV
Analog: An analog TV cannot display progressive-scan DVD or HDTV. It can show only standard-definition programs such as those found on regular TV, cable, or satellite—including digital cable and DirecTV or Dish Network.

Digital: A digital television, sometimes called a DTV, can also display progressive-scan DVD and almost always HDTV.
**EDTV:** This stands for Enhanced-Definition TV, and usually it describes a television that can display HDTV signals but doesn't have enough resolution to really do them justice. Most often it applies to plasma TVs and denotes 852x480 pixels (more info).

**HDTV:** High-definition televisions, or HDTVs, can display standard TV, progressive-scan DVD, and HDTV signals. They're by far the most common type of digital television.

### HDTV tuners

**Over the air:** Not all HDTVs actually come with a built-in tuner (called HDTV, digital, or ATSC tuners) that can receive high-definition programs over the air by simply connecting an antenna. Sets that have them built in are called integrated HDTVs, and those that don't are sometimes called HDTV ready or HDTV compatible; mostly they're all lumped together under the name HDTV. If you buy an HDTV-ready set, you'll also need to connect a separate tuner (or cable or satellite box) to watch high-definition programming. External over-the-air HDTV tuners currently cost at least $150.

**FCC tuner mandate:** You may have heard that all TVs will have to be HDTVs by a certain date. That's not technically correct. The FCC has mandated that certain sizes of televisions on sale on certain dates are required to have built-in ATSC tuners--but the TVs don't necessarily have to be able to display HDTV resolutions. Here's a look at the FCC's proposed rollout as it stands as of January 2006:

<table>
<thead>
<tr>
<th>Date</th>
<th>TV sizes that must include ATSC tuner*</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1, 2006</td>
<td>All TVs 25 inches or larger</td>
</tr>
<tr>
<td>March 1, 2007</td>
<td>All TVs regardless of screen size</td>
</tr>
</tbody>
</table>

*Note: Does not apply to monitors, such as many plasmas and front-projectors, that lack built-in standard (NTSC) tuners.

**Analog TV broadcast switch-off:** In December 2005, the Senate passed a budget bill that calls for over-the-air television stations to cease their analog broadcasts by February 17, 2009. After that date, TVs and other gear with old-style NTSC tuners would be unable to receive over-the-air broadcasts. Part of the government's quandary is that the switch-off would cause thousands of TVs to go dark and would deprive many lower-income viewers of their only source of television. To address this issue, lawmakers propose to subsidize converter boxes that would allow people to watch the new digital broadcasts on their old analog TVs. Further details on the transition to digital and the converter box subsidy are still being worked out, and given the slow progress over the last 9 years since the introduction of digital and HDTV, we wouldn't be surprised to hear of more changes before 2009.

**Cable and satellite:** The FCC's plans for ATSC tuners have nothing to do with HDTV over cable and satellite. Subscribers to pay TV services can simply get a set-top box that tunes HDTV channels, plug it into their HDTV-ready sets, and watch HDTV.

Some new HDTVs are digital cable ready (DCR), meaning they can tune digital cable channels, including HDTV if the cable provider has HDTV channels, without needing an external cable box. To use a DCR television, you'll need to get a special access card from your cable provider, called a CableCard. Unlike actual digital cable boxes, current DCR TVs can't do video-on-demand at all, and you must pick up a phone if you want to order pay-per-view programs. Using the card with some sets also means you can't access the electronic program guide (EPG), although many new DCR HDTVs include a third-party EPG, such as the TV Guide system, as a substitute.
HDTV resolutions

Resolution, or picture detail, is the main reason why HDTV programs look so good. The standard-definition programming most of us watch today has at most 480 visible lines of detail, whereas HDTV has as many as 1,080. HDTV looks sharper and clearer than regular TV by a wide margin, especially on big-screen televisions. It actually comes in two different resolutions, called 1080i and 720p. One is not necessarily better than the other; 1080i has more lines and pixels, but 720p is a progressive-scan format that should deliver a smoother image that stays sharper during motion (for more on progressive scanning, see our primer). Another format is also becoming more well-known: 1080p, which combines the superior resolution of 1080i with the progressive-scan smoothness of 720p. True 1080p content is extremely scarce however, and none of the major networks have announced 1080p broadcasts. Check out our comparison chart to see how HDTV stacks up against standard TV and progressive-scan DVD.

<table>
<thead>
<tr>
<th>Name</th>
<th>Resolution</th>
<th>HDTV?</th>
<th>Wide-screen?</th>
<th>Progressive-scan?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1080p</td>
<td>1,920x1,080</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>1080i</td>
<td>1,920x1,080</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>720p</td>
<td>1,280x720</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Wide-screen 480p (DVD, EDTV)</td>
<td>852x480</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Regular TV</td>
<td>Up to 480 lines</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Videophiles are quick to point out that not every HDTV can actually display all the resolution of an HDTV program. That's true; all but the most expensive sets with 9-inch CRTs, LCoS engines, or the very highest-resolution DLP and LCD panels are incapable of resolving every detail of 1080i material. Plasma, LCD, LCoS and DLP TVs have a fixed number of pixels, known as native resolution, and the higher that number, the more detail you'll see. Naturally, higher-resolution fixed-pixel displays, such as 1080p sets with 1,920x1,080 pixels, cost more money. At the end of the day, however, even the staunchest video critics will admit that a high-definition picture on any HDTV looks far superior to regular TV.

Regular TV and DVD on an HDTV

Regular TV on an HDTV: Aside from being able to display high-resolution HDTV shows and movies, a high-definition set can also make regular TV look a little better. Almost every HDTV has a processor that takes the regular TV image and converts it to progressive-scan for a more stable image. This conversion won't work miracles, however, and many HDTV buyers are disappointed by how regular television looks on their new sets. That's because the big screen exaggerates the flaws in standard TV programs. No matter how nice a TV you buy, there isn't much you can do to make regular TV, including digital cable or satellite, look better.

DVD on an HDTV: Since most people don't buy HDTV tuners and converted TV doesn't really leverage the full potential of a new high-def television, you may wonder why people buy HDTVs today at all. Most of them will probably tell you it's because of DVD. HDTVs can make DVD, a very high-quality source, look spectacular. Progressive-scan DVD players have their own internal processors that are generally superior to the ones inside most digital sets. Mating a prog-scan DVD with an HDTV will give you the best picture you can get outside of HDTV itself.

Your HDTV tomorrow

If you buy an HDTV today, you can be fairly certain it won't become obsolete anytime in the next few years. There is a possibility, however, that Hollywood studios will enforce some sort of copy protection on analog HDTV connections; a move is underway to "plug the analog hole." Your safest bet is to get an HDTV with a DVI/HDCP or HDMI connection (see Inputs and outputs). They're the most future-ready HDTV connectors currently available.
Want more information on HDTV? Check out CNET's HDTV World.

Wide-screen vs. 4:3
Television screens today come in two shapes. The most familiar one is called 4:3, which represents four inches of width for every three inches of height. You can also buy wide-screen, or 16:9, televisions, which take the same shape as many movies. Wide-screen sets cost more per square inch of screen than standard TVs, and most people watch more regular TV than DVDs and movies, so 4:3 sets are the most popular choice. Almost all large flat-panel and rear-projection TVs are wide screen, however, so it's just a matter of time before 16:9 becomes the most popular choice.

If you have $700 or more budgeted toward your next TV, you should seriously consider going wide. With huge numbers of anamorphic (enhanced for wide-screen) DVDs and the appearance of more wide-screen TV and HDTV shows, there's plenty of wide-screen content out there, and even more will appear in the future.

Black bars and unused screen
Many people choosing between 16:9 and 4:3 TVs wonder how much picture they'll be missing when viewing differently shaped programs. DVD and other wide-screen video shown on a standard TV have black bars, known as letterbox bars, above and below the wide-screen image. Conversely, regular programs shown on a wide-screen TV have windowbox bars on either side of the picture.

Screen size calculator
To find out exactly how much picture you'll be missing with either kind of TV, check out our calculator below. Just enter the diagonal screen size and aspect ratio of the set you're considering, then hit Calculate.

STANDARD 4:3 TV

Please enter your diagonal screen size in inches:

[Input field]

Normal view diagonal is: [Output]

Letterbox view diagonal is: [Output]

WIDE-SCREEN 16:9 TV

Please enter your diagonal screen size in inches:

[Input field]

Wide-screen diagonal is: [Output]

Windowbox view diagonal is: [Output]

Wide-screen TVs and 4:3 programs
All wide-screen TVs have ways to stretch, crop, or zoom the regular 4:3 image so that it fills the screen. These
methods distort the image somewhat, but many wide-screen TV owners prefer looking at slightly stretched people rather than windowbox bars. Here's a quick rundown of the different names for selectable aspect-ratio modes found on 16:9 sets:

- **Normal or 4:3**: Places windowbox bars on either side of the 4:3 screen.

- **Zoom or Enlarge**: Magnifies the entire image, eliminating the windowbox bars but cropping the top and bottom of the image. Often, more than one level of zoom is provided.

- **Wide or Full**: Used for native 16:9 content such as that found on DVDs. With 4:3 content, such as regular TV, it stretches the image horizontally, making people look shorter and fatter.

- **Panorama, TheaterWide, or Natural**: TV makers have many names for modes that compromise between stretching and zooming to fill the screen. Some stretch the sides of the image more than the middle, so people in the center of the screen look correct. Some crop a little so that they don't have to stretch as much.

### Key features and connectivity options

Convenience features, inputs, and even the sound system are all factors to consider in your next TV purchase. Many TV makers differentiate their baseline models from step-up versions by including all kinds of add-ons, so check our list to help determine whether that "loaded" set you're considering really has the features that matter.

#### Picture-in-picture (PIP)

**What it is:** Found primarily on more-expensive televisions, PIP lets you watch a second program in a little window. More-elaborate versions can resize the window, move it around the screen, create still or multiple still images, or simply divide the screen into two same-size pictures, often called *picture-outside-picture* (POP).

**What it isn't:** PIP has a dirty little secret, though: if you use an external tuner such as a cable box or a satellite receiver, you can watch only one program at once. If some of your channels are unscrambled, you can watch those on the second window, and you can usually watch other sources such as VHS or DVD on it, as well. But even with two-tuner PIP, a single cable/satellite box will prevent you from watching two live scrambled channels simultaneously.

#### Universal remote

**What it is:** Plenty of TVs now come with [universal remotes](http://www.cnet.com/4520-7874_1-5108580-9.html?tag=print) that can control other A/V gear.
Usually, they work with a cable or satellite box, and many can also command DVD players, VCRs, or even A/V receivers. If you like watching movies in the dark, you should look for a remote with backlit or glowing buttons.

**What it isn't:** Not every universal remote can control everything. Some, known as *unibrand* remotes, can control only the same brand of equipment as the TV itself. Most are preprogrammed with a set list of codes, and if the codes don't match your older or off-brand gear, you're out of luck. A few are learning models that can accept the IR codes from your other remotes and, thus, control any kind of gear.

**TV sound**

**What it is:** Almost every TV sold today has MTS stereo reception and stereo speakers, which provide much better sound than a single mono speaker. When TV makers list readings of 5 watts per channel or higher, it means the set has a respectable audio system for a TV. Some sets with simulated surround provide a semblance of the effect of rear speakers.

**What it isn't:** No TV can compete with a dedicated audio system, so even if your set has lots of watts and simulated surround sound, you should consider a home-theater audio system for maximum impact. If you have such a system, the TV's sound becomes a moot point.

**Tuner extras**

**What it is:** Channel-surfing modes, favorite-channel lists, and other features that rely on your TV's built-in tuner can make switching channels a lot more efficient—as long as you use that tuner.

**What it isn't:** The problem is, many people use external tuners such as a cable or satellite box to change channels. If you're one of those people, tuner extras are all but useless to you.

**Inputs and outputs**

Perhaps the single most confusing item on a TV spec sheet is the forest of inputs and outputs used to hook up the set to other equipment. The following trail of breadcrumbs, arranged in order of video quality, should help put you on the right connectivity path.

<table>
<thead>
<tr>
<th>Jack</th>
<th>Cable</th>
<th>Name</th>
<th>Typical use</th>
<th>Level of video quality</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="rf.png" alt="RF" /></td>
<td><img src="rf.png" alt="RF" /></td>
<td><strong>RF</strong> a.k.a. radio frequency; antenna; cable; screw type; F-pin</td>
<td>Antennae, VCRs, cable and satellite boxes</td>
<td>Lowest</td>
</tr>
<tr>
<td><img src="composite.png" alt="Composite video" /></td>
<td><img src="composite.png" alt="Composite video" /></td>
<td><strong>Composite video</strong> a.k.a. yellow video; video; A/V (when combined with audio jacks)</td>
<td>Cable and satellite boxes, VCRs, DVD players, game consoles</td>
<td>Low</td>
</tr>
<tr>
<td><img src="s-video.png" alt="S-Video" /></td>
<td><img src="s-video.png" alt="S-Video" /></td>
<td><strong>S-Video</strong> a.k.a. DIN 4</td>
<td>Cable and satellite boxes, S-VHS VCRs, DVD players, game consoles</td>
<td>Medium</td>
</tr>
<tr>
<td><img src="interlaced.png" alt="Interlaced component" /></td>
<td><img src="interlaced.png" alt="Interlaced component" /></td>
<td><strong>Interlaced component</strong> a.k.a. component; Y, Pb, Pr; Y, Cb, Cr; 480i</td>
<td>Standard DVD players</td>
<td>High</td>
</tr>
</tbody>
</table>
A quick note about switching: If you have multiple sources going into your TV, an A/V receiver with switching capabilities can really ease the hassle. The most convenient option is to leave your TV set to one input and have the receiver switch all other sources into that input. Many receivers have a feature called *video upconversion*, which often allows them to send every source, whether it's composite, S-Video, or component-video, through the component-video output. If you have a lot of gear, they can make switching between sources much more convenient. Receivers with HDMI switching or upconversion are still rare, however.

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**Judging picture quality**

The most difficult thing to judge when shopping for a TV is how good the picture looks. *Good* is a subjective term, so relying on the judgment of reviewers (such as CNET) may not get you exactly what you want. Then again, many reviewers scoff at the kinds of pictures that impress TV shoppers in the store. In this section, we'll offer some tips on become a more discerning viewer and what separates good pictures from the rest.

**The wall of tubes**

Most electronics stores show their televisions on a big wall, fed by the same video signal split a hundred times. Although bright lights, suspect salespeople, and a lack of remote controls will probably make any picture-quality
judgment difficult, here are a few things to look for on the wall.

- **Don't fall for brightness.** Almost every television on the sales floor is set to the brightest picture settings, so try to get the salesperson to reduce the controls of the TVs you're comparing. You want the pictures—not necessarily the controls—to be roughly equal in brightness, contrast, and color.

- **Go out of the light.** Few living rooms are as well lit as the sales floor, so see if the salesperson can reduce the amount of light shining on the picture. If nothing else, try to shade the screen if light is shining directly on it.

- **BYO DVD.** If you have a DVD that you're familiar with, see if you can use it instead of the TV signal that's normally shown. Aside from HDTV, which isn't very portable at the moment, DVD provides the best picture a television can display, so it makes for a good reference from which to judge.

- **Try all the picture modes.** Many sets come with numerous picture presets, such as Movie and Sports, that radically affect how the image appears. After you peruse the manually adjusted pictures, try the different presets and modes to see which ones look best.

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**Features that enhance picture quality**

Normal analog TVs, as opposed to digital TVs, have just a few factors that affect picture quality. Look for these features or characteristics and disregard other features that sound good on the surface but in reality are just marketing ploys. Naturally, there are other important factors we can't cover here, but this should get you started.

- **Comb filter.** If a television does not have a comb filter, its resolution will be limited to about half the full potential of DVD. Most sets with comb filters can provide all of the resolution of DVD. The types of comb filters you'll see advertised, in order of lower to higher quality, include two-line, three-line, digital, and 3D YC varieties. They provide incremental improvements in performance, especially in reducing rainbows that can appear in fine detail, such as a talking head's suit coat. Comb filters affect only composite-video or RF connections (see Inputs and outputs).

- **Color-temperature settings.** Many televisions have presets for color temperature, which is basically the color of gray. A neutral gray is ideal, but most TVs have an extremely blue gray to make the picture brighter in the store. TVs with color-temperature presets allow you to choose the color of gray; generally, you'll want the reddest or lowest setting available.

- **Color decoder.** Most TVs' color decoders are set to be too red to counteract the blue color temperature described above. TV makers don't advertise accurate color decoders, so you'll have to judge for yourself or trust a reviewer. In the store, look for pale skin tones that don't appear too flushed and reds that don't bleed into other colors or otherwise seem more intense than the rest of the palette.

- **Geometry and convergence.** Most TVs get bumped around in shipping, so it pays to check convergence before you take yours home—or at least before the warranty expires. Look toward the edges of the screen, preferably with graphics or other straight lines (CNN's crawling ticker works great), and see if the lines are actually straight. To check convergence, look at the corners with white material, preferably lines again, and see if faint halos of color surround the white.

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**Calibration**

You'll often see CNET reviews mention calibration or the ISF. When they review high-end televisions, our writers access a service menu using codes that aren't available to the average consumer.
consumer, and they use that menu—along with specialized equipment such as color analyzers—to calibrate the TV for optimal display of video according to NTSC standards. The Imaging Science Foundation, or ISF, has a program that trains professionals to calibrate televisions, and for a few hundred dollars, you can retain an ISF professional to adjust your TV.

Alternatively, you can use a calibration DVD to help you adjust the television. These discs, such as Ovation Software's Avia, Joe Kane's Video Essentials, and Sound & Vision's Home Theater Tune-Up, show you how to optimize your set within the limits of the standard user-accessible menus.

For more, check out "Picture perfect: HDTV tune-up tips."

Video gaming and computer tips

DVDs aren't the only non-TV content that's likely to be shown on the tube. Here are a few other pointers on what to look for in a television that'll do multimedia duty.

Game consoles

The sweet graphics of the Xbox, the PlayStation, and the GameCube can take full advantage of high-end televisions, but even inexpensive sets do best with a few added features in the mix. (For more info, check out "Fully Equipped: What's the ultimate HDTV for gamers?")

- Front-panel inputs. A set of A/V inputs on the front or side panel of a TV makes hooking up and disconnecting a game console—or a camcorder—much easier.

- Picture preset. Many TVs come with picture presets that affect the contrast, brightness, and other controls. Some presets crank those values sky-high to provide a more intense picture. If you like that bright image, check out sets with Game, Vivid, or Sports presets.

- S-Video inputs. Console graphics look best through better connections, so you should at least your hook up your game system via an S-Video connection instead of the standard composite-video cable that ships with the system.

- Component-video inputs. For the ultimate in gaming video quality, step up to a TV with component-video inputs. Whether you choose S-Video or component, you'll have to buy a special adapter and cables that run between $10 and $60. Some of these adapters also include connections for digital sound, but you'll need a home-theater system or a surround-sound setup with an optical digital connection and support for Dolby Digital sound to take advantage of the superior sonics.

- Burn-in. Some high-end TVs, namely plasma and CRT-based rear-projection sets, can become permanently scarred by very bright, stationary images that remain on the screen for a long time; think of a paused game or that constant score/life-bar/ammo-count graphic. However, we consider the danger of burn-in to be greatly exaggerated and plasmas and CRT-based RPTVs to be fine candidates for all but the heaviest gaming situations.

Computers

Today's televisions have plenty of connections and capabilities, and fixed-pixel displays usually make excellent computer monitors. If you want to use your TV as a big monitor for games, Web surfing, and other tasks, here are a few tips:

- Get S-Video at least. S-Video inputs will improve the look of the desktop on a TV, although it still won't look nearly as good as your standard monitor.
● **640x480 is the max.** You won't get a higher resolution than 640x480 with most tube televisions. The exceptions are DLP and LCD-based rear-projection TVs and flat-panel LCD and plasma televisions, which often display computer images at higher resolutions.

● **VGA input = computer-friendly.** Speaking of high-end TVs, if you're serious about using your set as a big monitor for standard software, look for a VGA-style RGB input, just like the kind your computer monitor uses (see Inputs and outputs for more). Digital DVI inputs are even better, and often you can use a TV's HDMI input with a special adapter and maybe a little tweaking to display images from your computer's DVI output.