Concept quiz

Circle one

Concrete performs better than steel in (compression/tension).

Steel performs better than concrete in (compression/tension).

You have a simply supported beam with a distributed load. Compression occurs on the (top/bottom) of the beam.

Which of the following beams will require more steel to hold the same amount of load?

d=30in
d=40in

Fill in the blank

If you are given a specific effective beam depth (d), within what range is the width of the beam (b)? Write as b in relation to d.

$b \leq \_\_\_\_ \ and \ b \geq \_\_\_\_$

If you have a 40 ft span estimate the effective depth of beam.

$d = \_\_\_\_\_$

What distance from the end of a concrete beam does shear failure occur in concrete?
_____

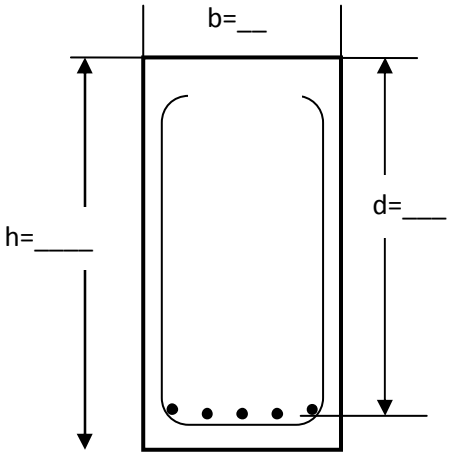
What angle does shear failure occurs from the end of the concrete?
_____.

To protect against shear failure you can install _____.

Shear reinforcement is installed in a concrete beam until the point when shear strength provided by the concrete is____ times the critical shear stress.

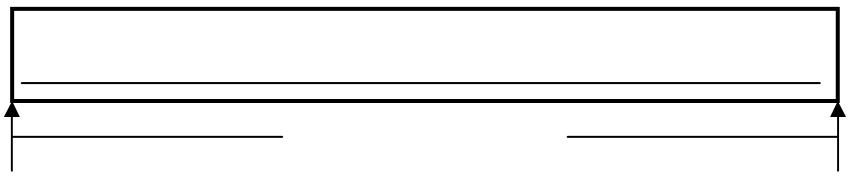
Use an effective depth of 40in and fill in a dimension for the following:

Width of section: b=
Height of section: h=
Concrete cap=
Minimum space between bars=
Minimum concrete space from bars to side of section=



Draw the following diagram for shear reinforcement and label spacing:

5 #5 bars at 15in spacing



Draw where shear failure occurs and label the critical distance.