Section I — +/– Feet & Inches

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1. 9′ 11″ – 6′ 8″ =

2. 17′ 11″ + 18′ 1″ =

3. 17′ 6″ + 10′ 11″ =

4. 8′ 8″ + 10′ 8″ =

5. 17′ 9″ + 11′ 10″ =

6. 18′ 8″ + 17′ 4″ =

7. 17′ 1″ – 1′ 8″ =

8. 17′ 2″ + 17′ 2″ =

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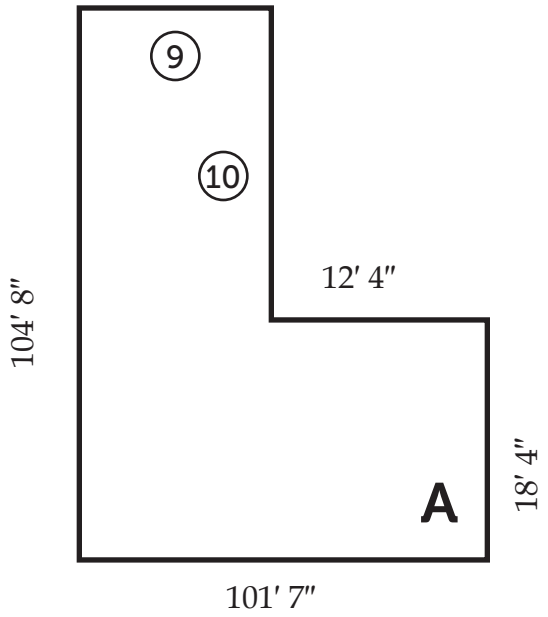
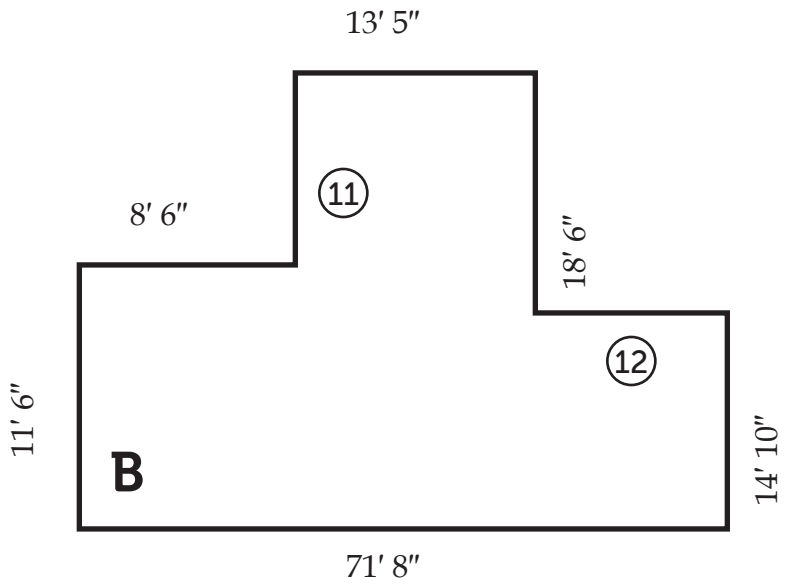
Section II — Find the Missing Side & Perimeter





Side	Length	Side	Length	Shape	Perimeter
9		11		A	13
10		12		B	14

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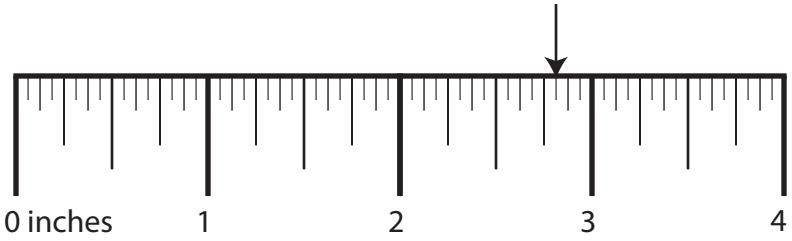
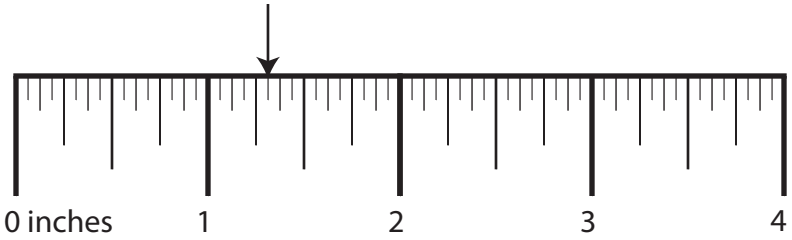
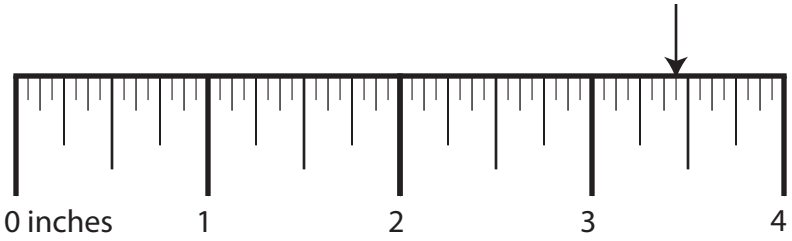
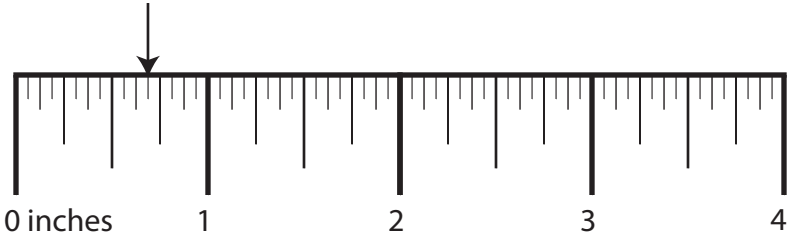
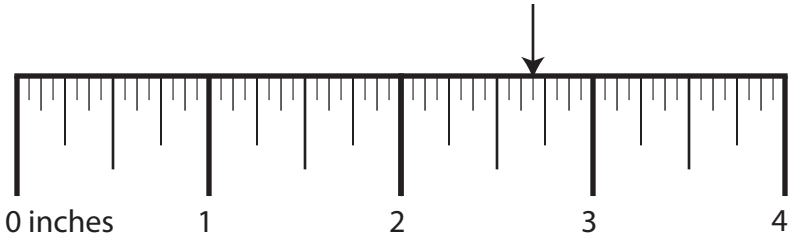
Section III — Ruler Measurements

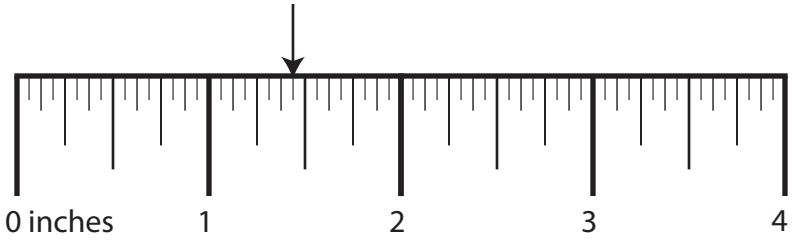
⑨ 

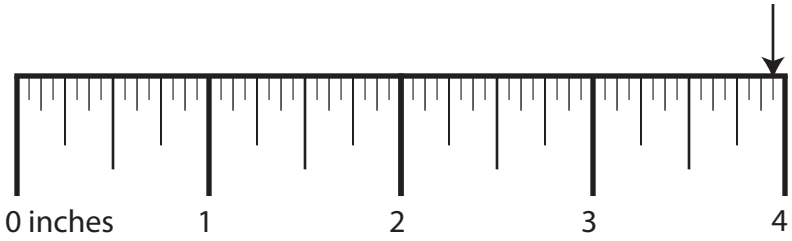
⑩ 

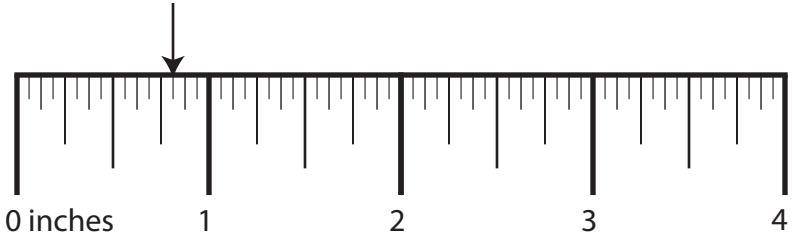
⑪ 

⑫ 

⑬ 

⑭ 

⑮ 

⑯ 

Section IV — More/Less Than

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23. What is ½ less than 2 ½?

24. What is ½ less than 3 ¼?

25. What is 1/16 less than 2 5/16?

26. What is ½ more than 3 ¼?

27. What is 5/16 less than 3 ¼?

28. What is ⅜ more than 5 3/16?

29. What is 3/16 more than 5 ½?

30. What is ⅛ less than 2 ¼?

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Section V — Nail Penetration & Screw Hole Bits

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How far will a ...

31. 16 penny nail penetrate a 3/8″ green board?

32. 11 ½ box gauge nail penetrate a 1 ¼″ green dimension?

33. 2 common gauge nail penetrate a 1 ¼″ green frame?

34. 3 common gauge nail penetrate a 1 ½″ dry timber?

What drill bit do you need to drill a ...
[Remember, # or letter only, except 27/64, 14/32, 29/64]

35. countersink hole for a 2 gauge screw?

36. clearance hole for a 14 gauge screw?

37. countersink hole for a 12 gauge screw?

38. clearance hole for a 11 gauge screw?

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Section VI — Math Calculations

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39. Room C's Wall #1, made of Silicon oil, if inside is 79°F and outside is 72°F?

40. Room B's Wall #3, made of Glass, window, if inside is 83°F and outside is 52°F?

41. How many mmBTUs are generated by burning 181 pounds of Ponderosa Pine?

42. Hexane cycle, 800 (lb/hr) flowrate, outside is 48°F, inside 90°F?

43. How many mmBTUs are generated by burning 411 pounds of White Pine?

44. How many pounds of CO2 are released by burning Anthracite coal for 1 weeks in a AB-155C?

45. Ammonia, 32oF cycle, 1340 (lb/hr) flowrate, outside is 56°F, inside 49°F?

46. How many pounds of CO2 are released by burning Bituminous coal for 8 weeks in a ET 150-H?

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Section VI — Math Calculations

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47. Alcohol, methyl. 60 - 70oF cycle, 564 (lb/hr) flowrate, outside is 66°F, inside 90°F?

48. How many mmBTUs are generated by running a ET 199-H for 5 months?

49. How many mmBTUs are generated by running a EG-65 for 6 months?

50. Alcohol, propyl cycle, 1279 (lb/hr) flowrate, outside is 66°F, inside 60°F?

51. How many pounds of CO2 are released by burning propane for 4 months in a ET 199-H?

52. How many mmBTUs are generated by burning 260 pounds of Aspen?

53. Room A's Wall #4, made of Pitch, if inside is 71°F and outside is 50°F?

54. Room B's TSA, made of Soil, clay, if inside is 71°F and outside is 105°F?

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Section VII — Blueprint Calculations

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55. Shape A, Scale = 48, panel job.

56. Shape C, Scale = 30, brick job.

57. Shape B, Scale = 32, caulking job.

58. Shape H, Scale = 32, wire job.

59. Shape G, Scale = 32, brick job.

60. Shape M, Scale = 8, baseboard job.

61. Shape R, Scale = 48, baseboard job.

62. Shape P, Scale = 8, panel job.

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