Section I — +/– Feet & Inches

3 4 7

1. 11′ 6″ – 10′ 2″ =

2. 14′ 9″ – 11′ 6″ =

3. 13′ 1″ – 3′ 7″ =

4. 11′ 9″ – 4′ 4″ =

5. 16′ 8″ + 10′ 3″ =

6. 11′ 10″ + 15′ 10″ =

7. 16′ 8″ – 11′ 6″ =

8. 9′ 6″ + 18′ 11″ =

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Section II — Find the Missing Side & Perimeter

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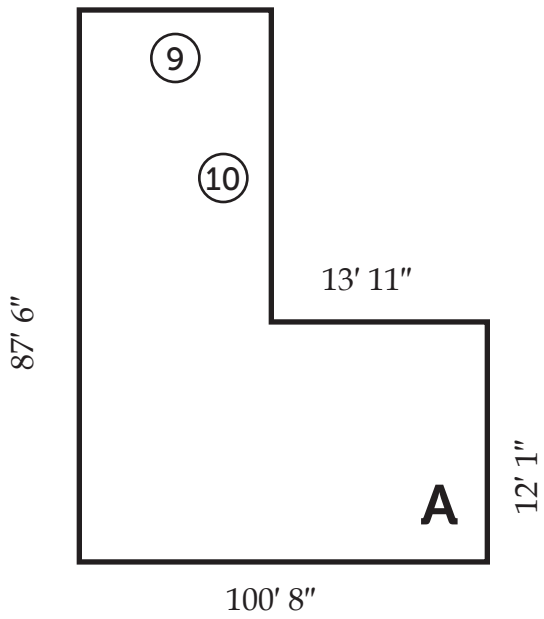

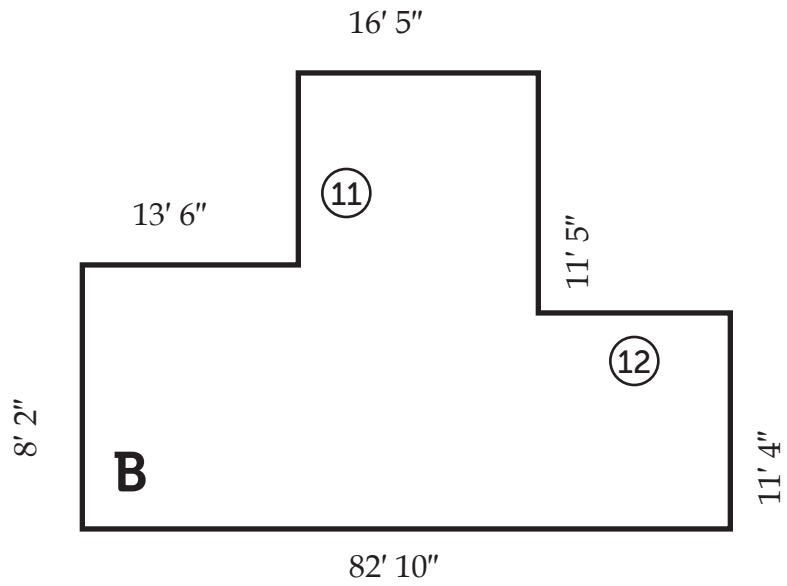

Side	Length	Side	Length
9	_____	11	_____
10	_____	12	_____

Shape	Perimeter
A	13 _____
B	14 _____

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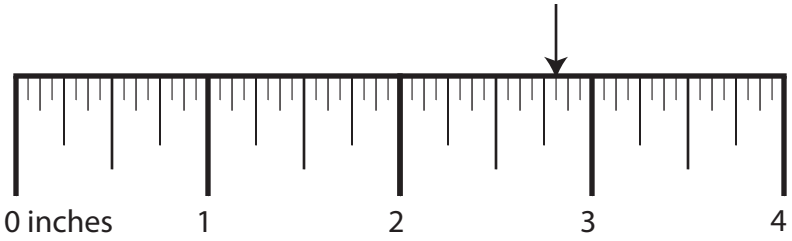
Section III — Ruler Measurements

9



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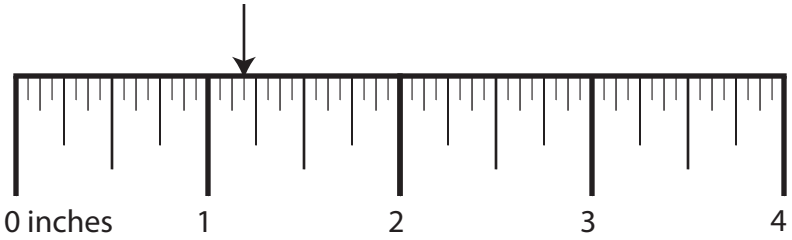

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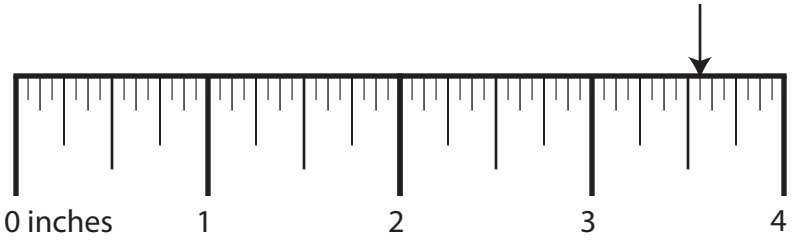

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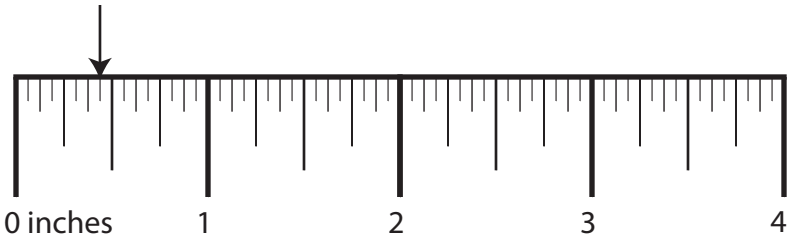

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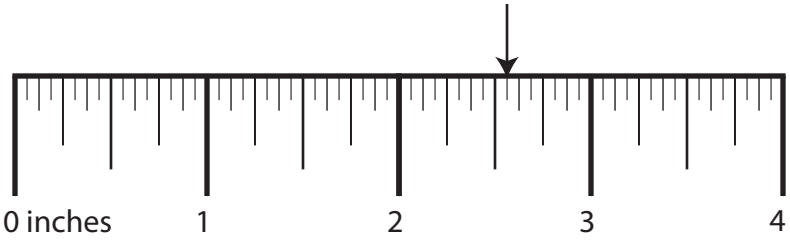

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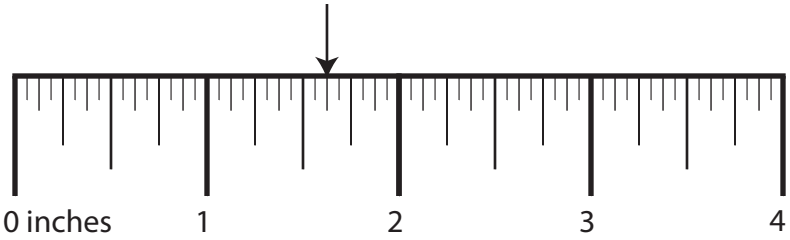

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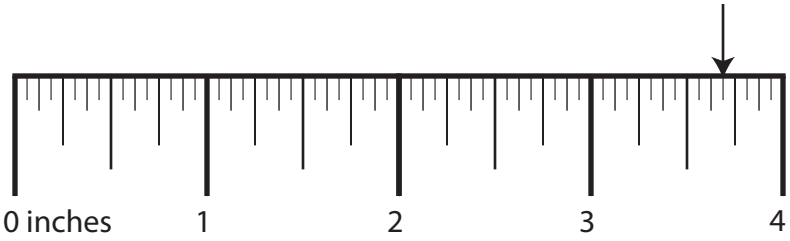

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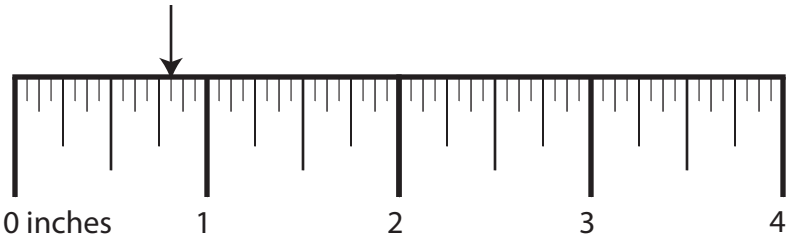

Section IV — More/Less Than

3 4 7

23. What is ½ more than 1 1/16?

24. What is ¼ more than 3 5/16?

25. What is ½ less than 3 ¼?

26. What is ½ less than 2 ½?

27. What is 3/16 less than 3 ⅛?

28. What is ½ less than 4 ⅜?

29. What is ⅜ more than 4 ¼?

30. What is ½ less than 3 ⅛?

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Section V — Nail Penetration & Screw Hole Bits

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How far will a ...

31. 12 ½ common gauge nail penetrate a 3 ½″ dry pole?

32. 40 penny nail penetrate a 1 ¼″ dry timber?

33. 4 common gauge nail penetrate a 4″ green girder?

34. 6 common gauge nail penetrate a 4 ½″ dry plank?

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 14 gauge screw?

36. clearance hole for a 3 gauge screw?

37. pilot hole for a 7 gauge screw?

38. clearance hole for a 12 gauge screw?

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Section VI — Math Calculations

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39. Room B's Floor, made of Urethane foam, if inside is 55°F and outside is 42°F?

40. Room A's Wall #4, made of Balsa wood, if inside is 57°F and outside is 61°F?

41. Room A's TSA, made of Glass, wool Insulation, if inside is 84°F and outside is 64°F?

42. Room B's Wall #4, made of Urethane foam, if inside is 63°F and outside is 86°F?

43. Room B's Wall #4, made of Asbestos-cement, if inside is 77°F and outside is 55°F?

44. Decane cycle, 1239 (lb/hr) flowrate, outside is 59°F, inside 50°F?

45. n-Butane, 32oF cycle, 1193 (lb/hr) flowrate, outside is 60°F, inside 68°F?

46. Room A's Wall #2, made of Asbestos mill board, if inside is 58°F and outside is 49°F?

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Section VI — Math Calculations

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47. How many pounds of CO2 are released by burning 170 pounds of Cherry?

48. Alcohol, methyl. 40 - 50oF cycle, 1233 (lb/hr) flowrate, outside is 88°F, inside 74°F?

49. How many pounds of CO2 are released by burning propane for 9 months in a ULT 399?

50. How many pounds of CO2 are released by burning diesel fuel for 8 hours in a CGa-4?

51. Alcohol, ethyl 104oF (ethanol) cycle, 691 (lb/hr) flowrate, outside is 89°F, inside 55°F?

52. How many pounds of CO2 are released by burning 216 pounds of Beech?

53. How many mmBTUs are generated by running a ET 199-C for 9 weeks?

54. How many mmBTUs are generated by running a ULT 155 for 10 months?

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Section VII — Blueprint Calculations

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55. Shape D, Scale = 35, brick job.

56. Shape A, Scale = 15, wire job.

57. Shape B, Scale = 8, paint job.

58. Shape H, Scale = 35, pipe job.

59. Shape J, Scale = 24, brick job.

60. Shape R, Scale = 15, baseboard job.

61. Shape L, Scale = 15, baseboard job.

62. Shape Q, Scale = 30, brick job.

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