Section I — +/− Feet & Inches

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1. 8′ 7″ + 11′ 4″ =

5. 15′ 10″ − 7′ 11″ =

2. 15′ 10″ − 1′ 6″ =

6. 10′ 7″ − 2′ 5″ =

3. 10′ 4″ + 11′ 9″ =

7. 10′ 10″ + 9′ 3″ =

4. 8′ 5″ − 4′ 3″ =

8. 14′ 11″ + 13′ 7″ =

Section II — Find the Missing Side & Perimeter

Shape A measurements:
- ⑨
- ⑩
- 9' 9"
- 79' 3"
- 16' 6"
- **A**
- 81' 9"

Shape B measurements:
- 9' 4"
- 17' 5"
- ⑪
- 9' 6"
- ⑫
- 10' 4"
- **B**
- 13' 11"
- 109' 4"
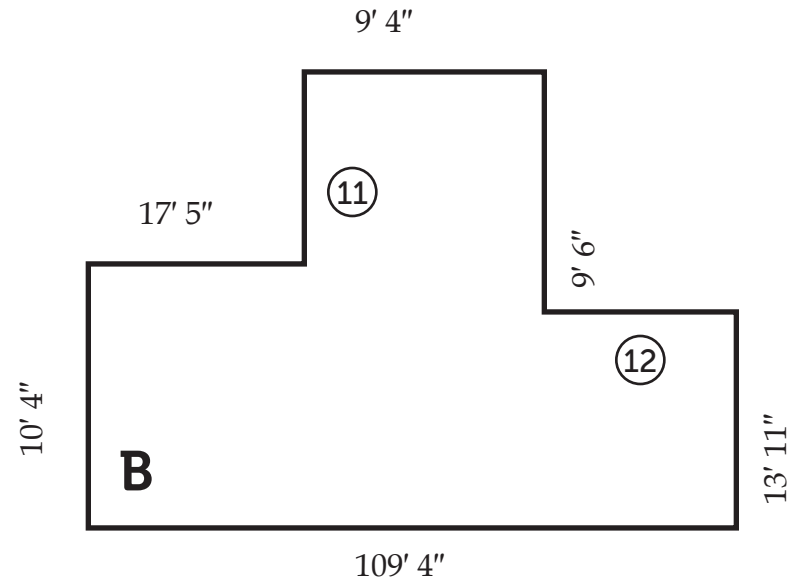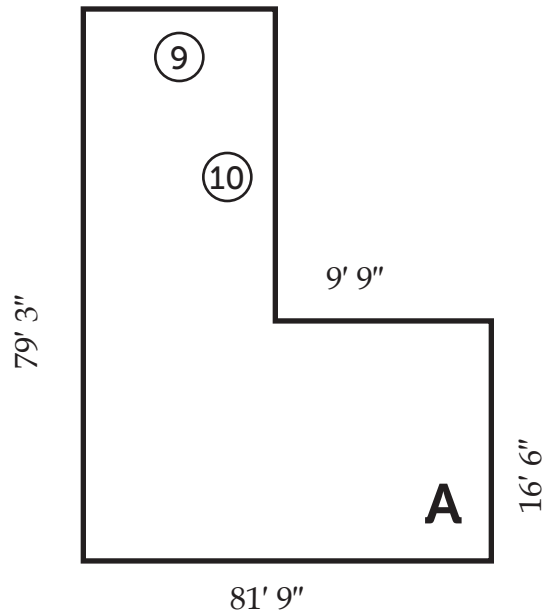
Side	Length	Side	Length	Shape	Perimeter
⑨	_____	⑪	_____	A	⑬ _____
⑩	_____	⑫	_____	B	⑭ _____

Section III — Ruler Measurements

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⑮

0 inches   1   2   3   4

⑯

0 inches   1   2   3   4

⑰

0 inches   1   2   3   4

⑱

0 inches   1   2   3   4

⑲

0 inches   1   2   3   4

⑳

0 inches   1   2   3   4

㉑

0 inches   1   2   3   4

㉒

0 inches   1   2   3   4
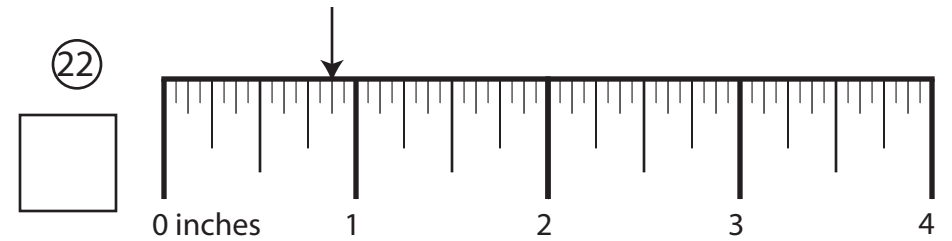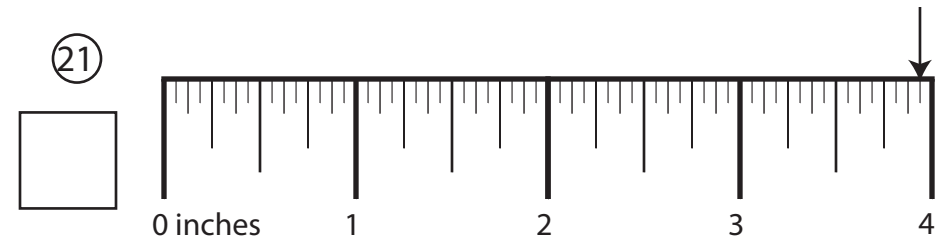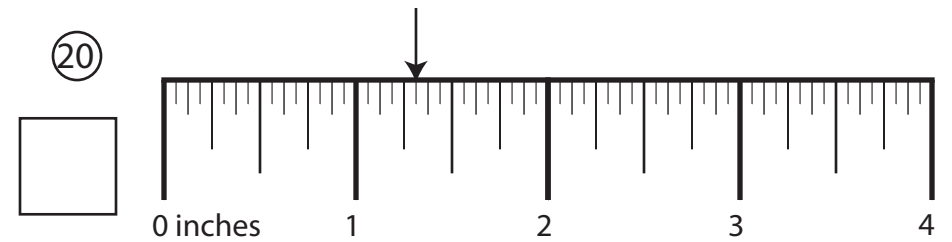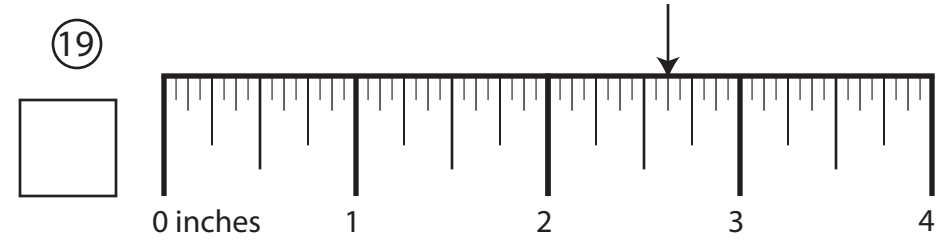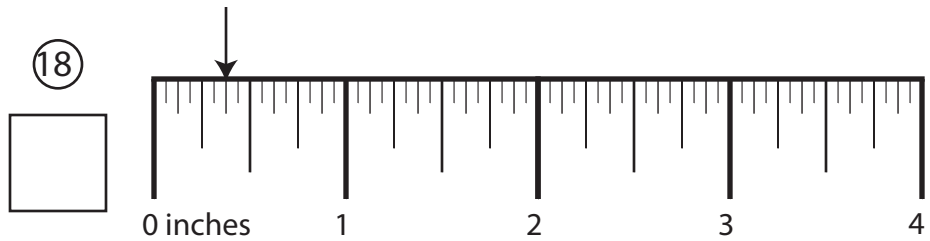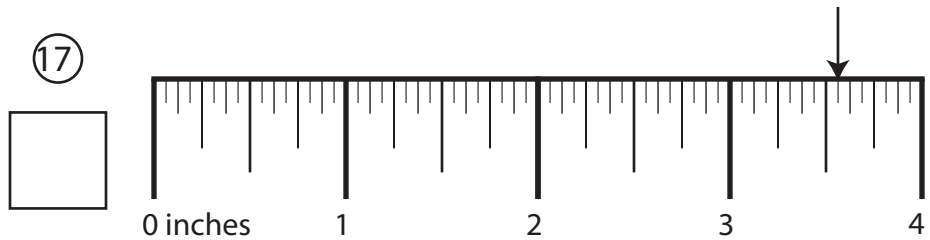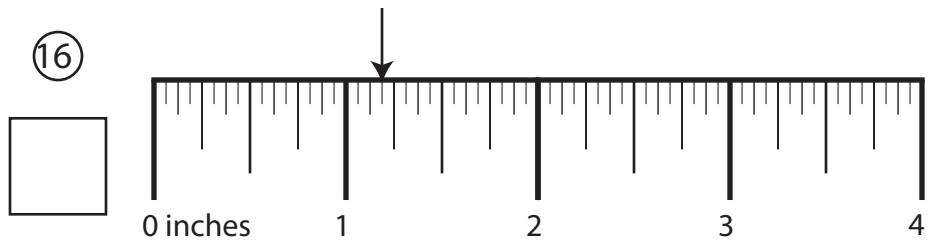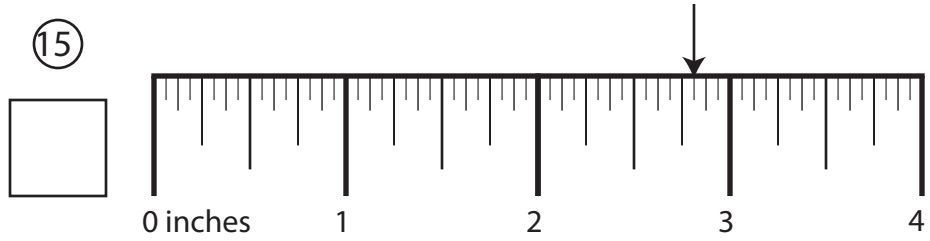
Section IV — More/Less Than

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23.   What is ³⁄₁₆ less than 4 ⅛?

27.   What is ½ more than 2 ⁵⁄₁₆?

24.   What is ³⁄₁₆ less than 5 ½?

28.   What is ¼ more than 1 ¼?

25.   What is ¼ more than 3 ¹⁄₁₆?

29.   What is ¹⁄₁₆ less than 2 ⅛?

26.   What is ⅛ more than 5 ¼?

30.   What is ½ more than 1 ⅛?

Section V — Nail Penetration & Screw Hole Bits

How far will a ...

31. 30 penny nail penetrate a 3/8″ green rafter?

32. 10 penny nail penetrate a 1″ dry frame?

33. 30 penny nail penetrate a 3 ½″ dry plank?

34. 11 ½ common gauge nail penetrate a 3 ½″ green mast?

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

35. pilot hole for a 5 gauge screw?

36. pilot hole for a 3 gauge screw?

37. pilot hole for a 9 gauge screw?

38. pilot hole for a 24 gauge screw?

Section VI — **Math** Calculations

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39. Room A's Wall #4, made of Wood across the grain, white pine, if inside is 62°F and outside is 53°F?

40.
  Room C's Floor, made of Gravel, if inside is 81°F and outside is 5°F?

41.
  Ammonia, 32oF cycle, 1250 (lb/hr) flowrate, outside is 87°F, inside is 66°F?

42.
  Room C's Wall #1, made of Timber, red pine, if inside is 57°F and outside is 18°F?

43. Room B's TSA, made of Timber, alder, if inside is 65°F and outside is 88°F?

44. How many pounds of CO_2 are released by burning Anthracite coal for 8 weeks in a EG-30?

45. How many pounds of CO_2 are released by burning butane for 8 months in a ULT 155?

46. How many pounds of CO_2 are released by burning 133 pounds of East.Hophornbeam?

Section VI — Math Calculations

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47. Ether cycle, 812 (lb/hr) flowrate, outside is 64°F, inside 60°F?

51. Room A's Wall #1, made of Brick, fire, if inside is 61°F and outside is 104°F?

48. Ammonia, 32oF cycle, 668 (lb/hr) flowrate, outside is 64°F, inside 57°F?

52. Room C's Wall #1, made of Hardwoods (oak, maple..), if inside is 77°F and outside is 3°F?

49. How many pounds of CO_2 are released by burning 312 pounds of Aspen?

53. Room B's Wall #2, made of Tar, if inside is 64°F and outside is 97°F?

50. Propyl Alcohol cycle, 1034 (lb/hr) flowrate, outside is 62°F, inside is 62°F?

54. How many mmBTUs are generated by burning 369 pounds of Cottonwood?

Section VII — Blueprint Calculations

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55. Shape B, Scale = 48, caulking job.

56. Shape D, Scale = 48, caulking job.

57. Shape E, Scale = 50, caulking job.

58. Shape G, Scale = 8, panel job.

59. Shape H, Scale = 48, panel job.

60. Shape R, Scale = 50, carpet job.

61. Shape K, Scale = 24, brick job.

62. Shape O, Scale = 48, brick job.