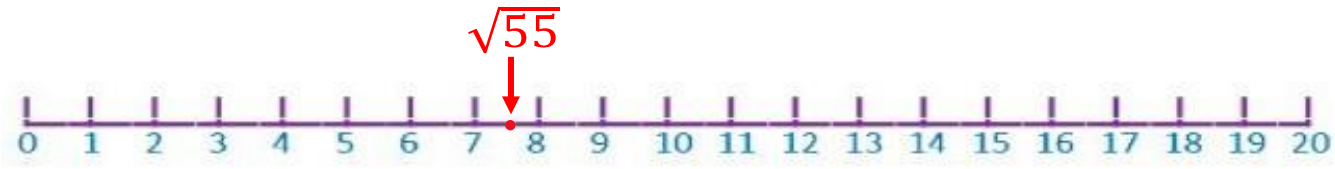
# Grade 9 Entry Screener 'A'

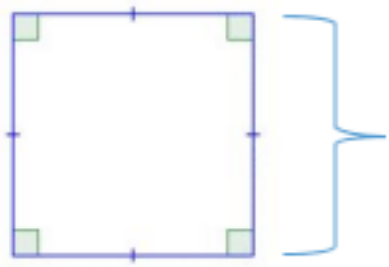
## Key

| | |
|---|---|
| 1. Write the value of the underlined digit in words or fraction form.<br><br>**322.1<u>4</u>8**<br><br>$\frac{4}{100}$ *or 4 hundredths* | 2. Solve<br><br>$\sqrt{36}=6$ |
| 3. Without calculating an answer, place the decimal point in the correct position.<br><br>$\mathbf{653.73 - 104.54 = 54919}$ | 4. Without calculating an answer, place the decimal point in the correct position.<br><br>$\mathbf{471.35 \div 98.2 = 425}$ |

5. Show where $\sqrt{55}$ would approximately lie on the number line.

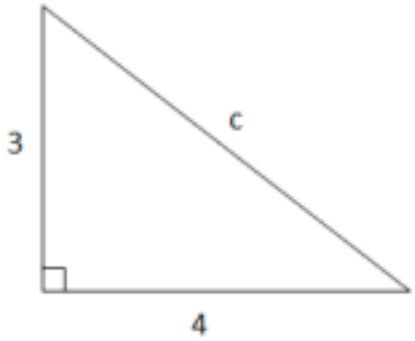


6. A square has an area of 81 $cm^2$. What is the length of one side of this square?



A = of 81 $cm^2$ Side Length = **9**

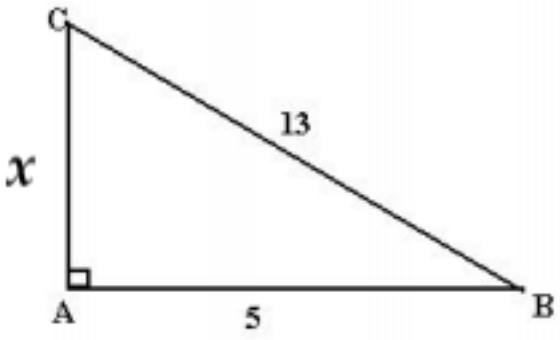
7. Find the length of side 'C'.




$a^2+b^2=c^2$
$(3)^2+(4)^2=c^2$
$25= c^2$
$\sqrt{25}=c$
$5= c$

Side C = **5**

8. Find the length of the missing side labeled '$x$'.




$a^2+b^2=c^2$
$(5)^2+(b)^2=(13)^2$
$25 + b^2 = 169$
$b^2 = 144$
$b^2 =\sqrt{144}$
$b=12$

$x$ = 12

9. Write 0.06 as a fraction.

$\frac{6}{100} or \frac{3}{50}$

10. Write $\frac{3}{100}$ as a percent.

3%

11. Write 45% as a decimal.

0.45

12. Write 28% as a fraction.

$\frac{28}{100}$ *or* $\frac{14}{50}$ *or* $\frac{7}{25}$

13. Convert $\frac{18}{5}$ to amixed number.

$3\frac{3}{5}$

14. Write $2\frac{3}{5}$ as an improperfraction (common fraction).

$\frac{13}{5}$

15. Add:

$\frac{2}{9} + \frac{5}{9} = \frac{7}{9}$

16. Write $\frac{8}{12}$ in lowest terms.

$\frac{2}{3}$

17. Subtract

$\frac{3}{4} - \frac{1}{8} =$

$\frac{6}{8} - \frac{1}{8} = \frac{5}{8}$

18. Order least to greatest:

0.64 0. 8 0.259

**0.259 0.64 0.8**

19. Express $\frac{3}{4}$ as a percent.

**75%**

20. Express $\frac{1}{5}$ as a decimal.

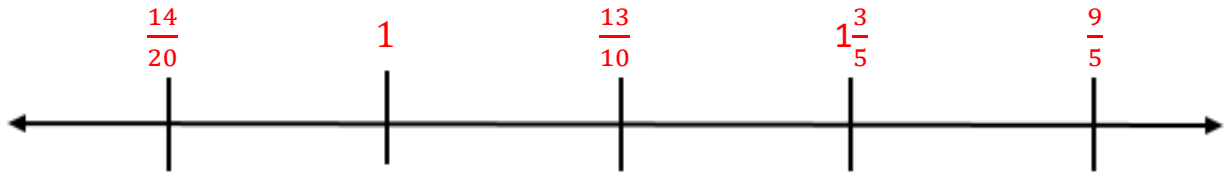
**0.2 or 0.20**

21. Express 12% as a fraction in simplest terms.

$\frac{12}{100} = \frac{3}{25}$

22. Write the following fractions on the number line below:

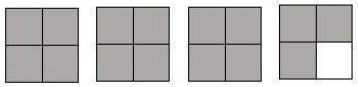
$\frac{14}{20}, \frac{13}{10}, 1\frac{3}{10}, \frac{9}{5}, 1\frac{4}{5}, 1\frac{3}{5}, 1$



23. Express as a mixed number.

$2\frac{3}{4}$

24. Express as an improper fraction:



$\frac{15}{4}$

25. Subtract:

$6\frac{5}{8} - 2\frac{1}{4} =$

$4\frac{3}{8}$ *or* $\frac{35}{8}$

26. Add:

$5\frac{1}{4} + 3\frac{1}{2} =$

$8\frac{3}{4}$ *or* $\frac{35}{4}$

27. Divide:

$\frac{1}{2} \div 3 = \frac{1}{6}$

28. Multiply:

$\frac{2}{7} \times 5 = \frac{10}{7}$ *or* $1\frac{3}{7}$

29. Multiply:

$\frac{4}{7} \times \frac{2}{3} = \frac{8}{21}$

30. Divide:

$\frac{3}{4} \div \frac{2}{5} =$

$\frac{3}{4} \times \frac{5}{2} = \frac{15}{8}$ *or* $1\frac{7}{8}$

31. Solve:

$$1\frac{1}{3} \times \left(\frac{5}{8} + \frac{3}{4} - \frac{5}{6}\right) =$$

$$\frac{8}{5} \times \left(\frac{15}{24} + \frac{18}{24} - \frac{20}{24}\right)$$

$$\frac{8}{5} \times \left(\frac{13}{24}\right) = \frac{104}{120} \text{ or } \frac{13}{15}$$

32. A vehicle travels 256 km in 4 hours. What is its rate of speed?

**64 km/h**

33. The ratio of vitamin powder to orange juice is 2 scoops to 3 cups of juice. How many scoops of powder are required for a 12 cup pitcher of juice?

**2:3**

**8:12**

**8 scoops**

34. Solve:

$(+8) + (-6) = +2$

35. Solve:

$(-5) - (-4) = -1$

36. Solve:

$(-3)(-8) + (24) \div (-2) =$

$+24 + (-12) = 12$

37. Solve:

$5 \times 3 + 12 \div 2 =$

$15 + 6 = 21$

38. Solve:

$20 - 6(2) \div 4 + 7 =$

$20 - 12 \div 4 + 7 =$

$20 - 3 + 7 = 24$

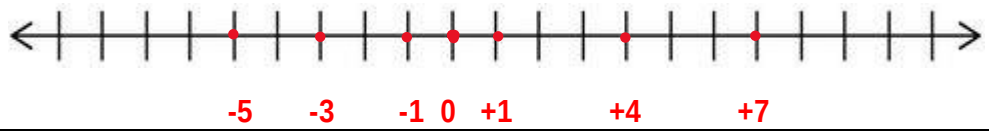
39. Solve:

$$\frac{6(-8)}{-12} - 1 =$$

$$\frac{-48}{-12} - 1 =$$

$4 - 1 = 3$

40. Place these integers on the number line: **+4, 0, -3, +7, -5, -1, +1**

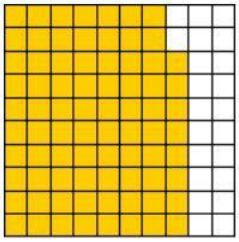



41. Order the following from greatest to least:

$\frac{5}{2}$, 1.4, $1\frac{1}{4}$, 0.9, 0, 1

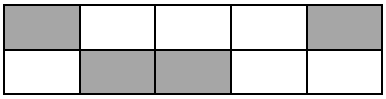
**0, 0.9, 1, $1\frac{1}{4}$, 1.4, $\frac{5}{2}$**

42. What percent of thediagram is shaded?



78%

43. What percent of the diagram is shaded?



40%

44. Rewrite as a percentage:

$0.03 =$ 3%

45. Write 0.045 as a percent.

$0.045 =$ 4.5%

46. Write 156% as a decimal.

$156\% =$ 1.56

47. Find 35% of 260.

91

48. What is 10% of 438?

43.8

49. Last year 340 people came to the grade 9 track meet. This year the audience was 120% of what it was last year. How many people came this year?

408

50. Solve:

0.458 x 6 =

2.748

51. Divide:

$6.52 \div 2 =$1.63

52. Divide:

$3.22 \div 0.5 =$ 6.44

53. What integer is 3more than -5?

$-2$

54. What is the greatest common factor (GCF) of 16 and 48?

| 16 | 48 | |
|---|---|---|
| 1x16 | 1x48 | |
| 2x8 | 2x24 | |
| 4x4 | 3x16 | **16** |
| | 4x12 | |
| | 6 x 8 | |

55. What is the least common multiple (LCM) of 18 and 45?

18, 36, 54, 72, 90
45, 90

**90**

56. What is the pattern rule?

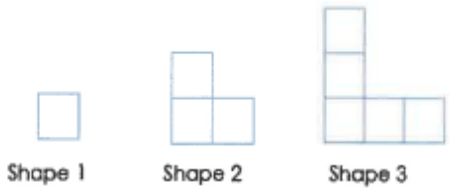
Write an expression to represent the pattern.

| Input | Output |
|---|---|
| 1 | 2 |
| 2 | 5 |
| 3 | 8 |
| 4 | 11 |

Pattern rule: add 3

$3n - 1$

57. Write a rule for this pattern and use it to find the number of blocks in Shape 20.




Rule: $2n - 1$

| Shape number $n$ | Number of Blocks |
|---|---|
| 1 | 1 |
| 2 | 3 |
| 3 | 5 |
| 4 | 7 |
| 5 | 9 |
| 20 | 39 |

58. Write an expression for "three times a number minus four."

$3n - 4$

59. Write an equation for the statement "four times a number equals 20."

$4n = 20$

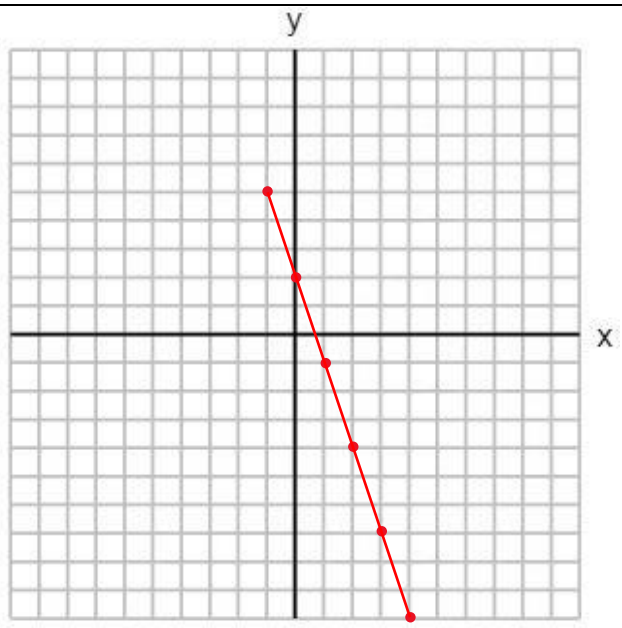
60. The ski club is planning a trip, and the bus company will charge them using the formula $C = 30 + 50n$, where $C$ is the cost for $n$ people. Find the cost if 12 peopleare going.

$$c = 30 + 50n$$
$$c = 30 + 50(12)$$
$$c = 30 + 600$$
$$c = 630$$

61. Complete the table of values for the equation:

$$y = -3x + 2$$

| $x$ | $y$ |
|---|---|
| -1 | 5 |
| 0 | 2 |
| 1 | -1 |
| 2 | -4 |
| 3 | -7 |
| 4 | -10 |




62. Circle the ordered pair(s) that belong to the linear relation $y = 3x - 5$

**(2,7)** **(2,1)** **(3,2)**

63. Solve

$$w - 25 = 34$$
$$w = 34 + 25$$
$$w = 59$$

64. Solve

$$16 = 3x + 4$$
$$16 - 4 = 3x$$
$$12 = 3x$$
$$4 = x$$

65. Solve

$$\frac{3x}{2} - 4 = 5$$
$$\frac{3x}{2} = 5 + 4$$
$$\frac{3x}{2} = 9$$
$$3x = 18$$
$$x = 6$$

66. Solve

$$-3(m - 2) = 21$$
$$-3m + 6 = 21$$
$$-3m = 21 - 6$$
$$-3m = 15$$
$$m = -5$$