

Name the sets of numbers to which each of the following numbers belongs.

- 1) -3      2) 7      3)  $\frac{9}{11}$       4)  $\sqrt{25}$       5) 0      6) 7.78

R, Q, Z	R, Q, Z, W, N	R, Q	R, Q, Z, W, N	R, Q, Z, W	R, Q
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- 7)  $\sqrt{17}$       8) 5.875      9) 3.316624...      10) -15      11) 24

R, I	R, Q	R, I	R, Q, Z	R, Q, Z, W, N
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Identify the property of real numbers illustrated in each problem.

- 12)  $31(1) = 31$       13)  $17 + 5 = 5 + 17$       14)  $12 + (-12) = 0$

Multiplicative Identity	Commutative (+)	Additive Inverse
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- 15)  $5(7 \cdot 8) = (5 \cdot 7)8$       16)  $71(5 + 21) = 71(5) + 71(21)$

Associative (X)	Distributive
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- 17)  $29 + 0 = 29$       18)  $(\frac{19}{11})(\frac{11}{19}) = 1$       19)  $13(7) = 7(13)$

Additive Identity	Multiplicative Inverse	Commutative (X)
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- 20)  $17 + (13 + 41) = (17 + 13) + 41$       21)  $3(24 \cdot 19) = (3 \cdot 24)19$

Associative (+)	Associative (X)
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- 22)  $8 \div 24 = 24 \div 8$       23)  $(-\frac{2}{5}) + (\frac{2}{5}) = 0$       24)  $(-\frac{7}{3})(-\frac{3}{7}) = 1$

Not a Property	Additive Inverse	Multiplicative Inverse
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Explain the meaning of the following operations.

25)  $12 + 53$  - A group of 53 added to a group of 12.

26)  $9 \times 12$  - 9 groups of 12 added together.

27)  $8^5$  - 5 groups of 8 multiplied together.

28)  $76 - 44$  - A group of 44 taken from a group of 76.

29)  $48 \div 8$  - 48 divided into groups of 8 or 8 groups.

30) Why is  $48 \div 8$  defined? 48 can be divided into 6 groups of 8. There is a set answer.

31) Why is  $6 \div 0$  undefined? No number of groups of zero add to 6.

32) Why is  $0 \div 0$  undefined? Any number of groups of zero add to zero.