

Definition 1. Let N be some real number. Let M be some real number. Let the function T be defined as $T(y) = |y - N| + M$ with a domain of $(-\infty, \infty)$.

Exercise 1 The least value attained by T is M .

Multiple Choice:

- (a) True ✓
 - (b) False
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Exercise 2 The greatest value attained by T is M .

Multiple Choice:

- (a) True
 - (b) False ✓
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Exercise 3 The equation $T(y) = M + 1$ has how many solutions?

Select All Correct Answers:

- (a) 0
 - (b) 1
 - (c) 2 ✓
 - (d) 3
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Exercise 4 T is an increasing function.

Multiple Choice:

- (a) True
- (b) False ✓

Definition 2. Let N be some real number. Let M be some real number. Let the function V be defined as $V(y) = |y - N| + M$ with a domain of $[N, \infty)$.

Exercise 5 The least value attained by V is M .

Multiple Choice:

- (a) True ✓
- (b) False

Exercise 6 The equation $V(y) = M + 1$ has how many solutions?

Select All Correct Answers:

- (a) 0
- (b) 1 ✓
- (c) 2
- (d) 3

Exercise 7 V is an increasing function.

Multiple Choice:

- (a) True ✓
- (b) False

Definition 3. Let N be some real number. Let M be some real number. Let the function W be defined as $W(y) = |y - N| + M$ with a domain of (N, ∞) .

Exercise 8 The least value attained by W is M .

Multiple Choice:

- (a) *True*
 - (b) *False* ✓
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Exercise 9 The equation $W(y) = M + 1$ has how many solutions?

Select All Correct Answers:

- (a) 0
 - (b) 1 ✓
 - (c) 2
 - (d) 3
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Exercise 10 W is an increasing function.

Multiple Choice:

- (a) *True* ✓
 - (b) *False*
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