2017 STAAR Grade 7 Math Rationales

Item #	Response A/F	Response B/G	Response C/H	Response D/J
1	A is incorrect because 15 seeds sprouted in one packet. 15 x 6 packets = 90 seeds, which is more than 50 seeds.	B is correct because15 seeds sprouted in one packet. 15 x 6 packets = 90 seeds, which is between 50 and 100 seeds.	C is incorrect because 15 seeds sprouted in one packet. 15 x 6 packets = 90 seeds, which is not between 100 and 120 seeds.	D is incorrect because 15 seeds sprouted in one packet. 15 x 6 packets = 90 seeds, which is not all 120 seeds.
2	F is correct because the length can be found using the proportion x/18 = 15/12, which simplifies to x = 22.5.	G is incorrect because the length can be found using the proportion x/18 = 15/12, which simplifies to x = 22.5, not 8.	H is incorrect because the length can be found using the proportion x/18 = 15/12, which simplifies to x = 22.5, not 10.8.	J is incorrect because the length can be found using the proportion x/18 = 15/12, which simplifies to x = 22.5, not 30.
3	A is incorrect because 3(20 - 14) = 18, not 44.	B is incorrect because 3(12 - 14) = -6, not 6.	C is correct because 2(14 - 3) = 22.	D is incorrect because 2(14) - 3 = 25, not 22.
4	F is correct because the formula for the area of a rectangle is A = bh, so the total area of the yard minus the area where digging is not allowed can be found using A = 22(17) - 6(17) = 272.	G is incorrect because the formula for the area of a rectangle is A = bh, so the total area of the yard minus the area where digging is not allowed can be found using A = 22(17) - 6(17) = 272, not 374.	H is incorrect because the formula for the area of a rectangle is A = bh, so the total area of the yard minus the area where digging is not allowed can be found using A = 22(17) - 6(17) = 272, not 102.	J is incorrect because the formula for the area of a rectangle is A = bh, so the total area of the yard minus the area where digging is not allowed can be found using A = 22(17) - 6(17) = 272, not 59.
5	A is correct because the change can be found using 10 (1.69 + 1.69 + 1.49 + 1.09 + 0.48) = 3.56.	B is incorrect because the change can be found using 10 (1.69 + 1.69 + 1.49 + 1.09 + 0.48) = 3.56, not 6.44.	C is incorrect because the change can be found using 10 (1.69 + 1.69 + 1.49 + 1.09 + 0.48) = 3.56, not 5.25.	D is incorrect because the change can be found using 10 (1.69 + 1.69 + 1.49 + 1.09 + 0.48) = 3.56, not 4.75.
6	F is incorrect because the range of the data for Farm Y, which is 30 - 5 = 25, is less than the range of the data for Farm X, which is 35 - 4 = 31.	G is incorrect because the third quartile of the data for Farm Y, which is 27, is greater than the third quartile of the data for Farm X, which is 24.	H is correct because the median of the data for Farm Y, which is 18, is greater than the median of the data for Farm X, which is 17.	J is incorrect because the first quartile of the data for Farm Y, which is 12, is less than the first quartile of the data for Farm X, which is 15.
7	A is incorrect because 25 cards multiplied by the number of weeks, w, added to 200 cards is greater than 750 is represented by the inequality 25w + 200 > 750, not 200w + 25 < 750.	B is incorrect because 25 cards multiplied by the number of weeks, w, added to 200 cards is greater than 750 is represented by the inequality 25w + 200 > 750, not 25w + 200 < 750.	C is incorrect because 25 cards multiplied by the number of weeks, w, added to 200 cards is greater than 750 is represented by the inequality 25w + 200 > 750, not 200w + 25 > 750.	D is correct because 25 cards multiplied by the number of weeks, w, added to 200 cards is greater than 750 is represented by the inequality 25w + 200 > 750.
8	F is incorrect because the formula for the circumference of a circle is C = 2 Œ sb, C = Œ §, 15.7, not 7.85.	G is correct because the formula for the circumference of a circle is C = 2 Œ sb, C = Œ §, 15.7.	H is incorrect because the formula for the circumference of a circle is C = 2 Œ sb, C = Œ §, 15.7, not 19.63.	J is incorrect because the formula for the circumference of a circle is C = 2 Œ sb, C = Œ §, 15.7, not 31.4.
9	A is incorrect because d = 55t does represent a car traveling at 55 miles per hour.	B is incorrect because the table shows values of time and distance that do represent a car traveling at 55 miles per hour.	C is correct because a car traveling 160 miles in 3 hours does NOT represent a car traveling at 55 miles per hour.	D is incorrect because the graph does represent a car traveling at 55 miles per hour.

2017 STAAR Grade 7 Math Rationales

Item #	Response A/F	Response B/G	Response C/H	Response D/J
19	A is incorrect because the area of the semicircle + W U L D Q J O H L V $ + § ² + (1/2)(7)(8) = 53, not 78.	B is incorrect because the area of the semicircle + W U L Œ D Q J O H L V $ + § ² + (1/2)(7)(8) = 53, not 81.	C is incorrect because the area of the semicircle + W U L Œ D Q J O H L V $ + § ² + (1/2)(7)(8) = 53, not 106.	D is correct because the area of the semicircle + triangle is A Œ Œ² § (1/2)(3.14)(4)^2 + (1/2)(7)(8) = 53.