Depth of Knowledge Matrix – Seventh Grade Math

Topic	Markup & Discount	Unit Rates with Fractions	+ and – Rational Numbers	x and ÷ Rational Numbers
CCSS Stand.	• 7.RP.3	• 7.RP.1	• 7.NS.1	• 7.NS.2
DOK 1 Example	Find the final price of a $75 item after a 45% discount.	Find the unit rate. $\frac{2/9}{3/8} = \frac{\square}{1}$	Find the sum. $-12 + -7$	Find the quotient. $\frac{-3}{4} \div \frac{7}{5}$
DOK 2 Example	Using the digits 0 to 9 at most one time each, fill in the boxes to create two true statements without rounding. You may reuse all the digits each time. $\square\square$ item at a $\square\square$% discount costs $\square\square$	Using the digits 0 to 9 at most one time each, fill in the boxes to create two unit rates. You may reuse all the digits each time. $\frac{\square/\square}{\square/\square} = \frac{\square}{1}$	Using the integers -9 to 9 at most one time each, fill in the boxes to create two equations. You may reuse all the integers each time. $-\square + \square = \square - (-\square)$	Using the integers -9 to 9 at most one time each, fill in the boxes to create two equations. You may reuse all the integers each time. $-\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$
DOK 3 Example	Using the digits 0 to 9 at most one time each, fill in the boxes to create the least expensive item after discount. $\square\square$ item at a $\square\square$% discount costs $\square\square$	Using the digits 0 to 9 at most one time each, fill in the boxes to create a unit rate with the greatest possible value. $\frac{\square/\square}{\square/\square} = \frac{\square}{1}$	Using the integers -9 to 9 at most one time each, fill in the boxes to create an equation where each side has the greatest possible value. $-\square + \square = \square - (-\square)$	Using the integers -9 to 9 at most one time each, fill in the boxes to create a quotient with the greatest possible value. $-\frac{\square}{\square} \div \frac{\square}{\square} = \frac{\square}{\square}$

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Version 1.0

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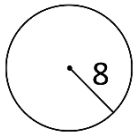
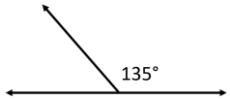
Topic	Probability	Solving Two-Step Equations	Circles	Complementary & Supplementary Angles
CCSS Stand.	• 7.SP.5 & 7.SP.7	• 7.EE.4a	• 7.G.4	• 7.G.5
DOK 1 Example	What is the probability of rolling a sum of 5 using two 6-sided dice?	Solve for x. $4x + 2 = -7$	Find the area. 	Find the missing angle in the supplementary angles below. 
DOK 2 Example	What value(s) have a 1/12 probability of being rolled as the sum of two 6-sided dice?	Using the digits 1 to 9 at most one time each, fill in the boxes to create two equations: one where x has a positive value and one where x has a negative value. You may reuse all the digits each time. $\square x + \square = \square$	Using the digits 0 to 9 at most one time each, fill in the boxes to create two possible circles. You may reuse all the digits each time. radius = ☐ units The area is between ☐☐ and ☐☐☐ units²	Using the digits 0 to 9 at most one time each, fill in the boxes to create two sets of supplementary and complementary angles. You may reuse all the digits each time. Supplementary angles ☐☐☐° and ☐☐° Complementary angles ☐☐° and ☐☐°
DOK 3 Example	Using the digits 1 to 9 at most one time each, fill in the blanks to make this sentence true. Rolling a sum of ___ on two ___-sided dice is the same probability as rolling a sum of ___ on two ___-sided dice.	Using the digits 1 to 9 at most one time each, fill in the boxes to create an equation where x has the least possible value. $\square x + \square = \square$	Using the digits 0 to 9 at most one time each, fill in the boxes to create a circle with the smallest difference between the area estimates. radius = ☐ units The area is between ☐☐ and ☐☐☐ units²	Using the digits 0 to 9 at most one time each, fill in the boxes to create supplementary and complementary angles where the measures of each pair of angles are as close together as possible. Supplementary angles ☐☐☐° and ☐☐° Complementary angles ☐☐° and ☐☐°

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