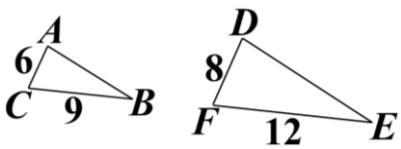
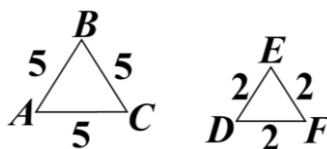
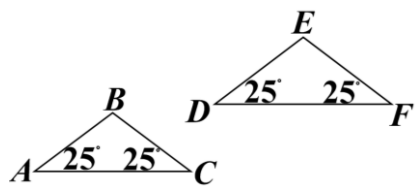
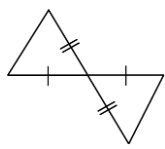

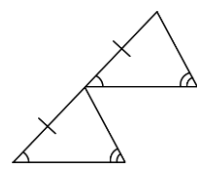
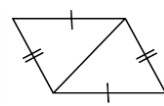
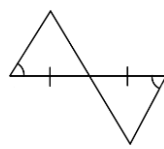
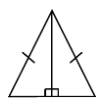
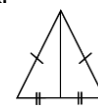
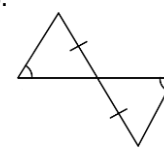
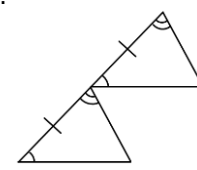
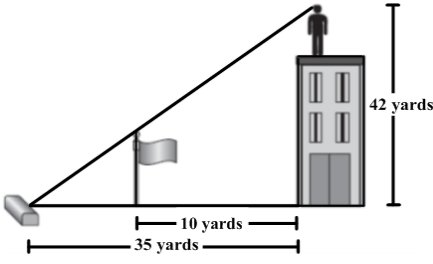
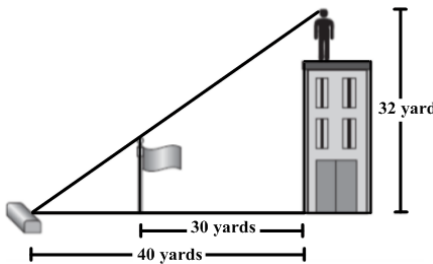
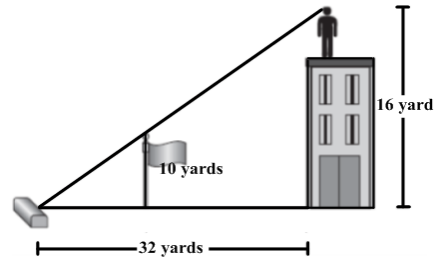
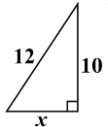
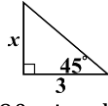
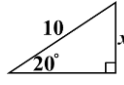
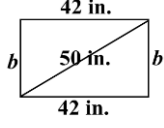
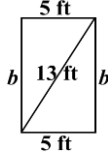
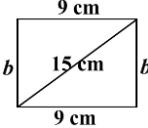
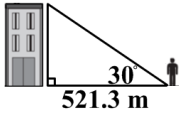
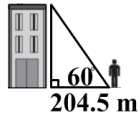
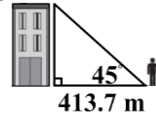
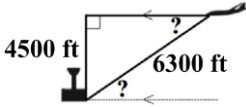
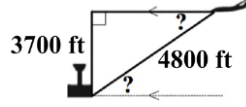
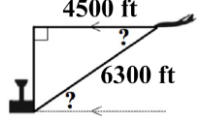
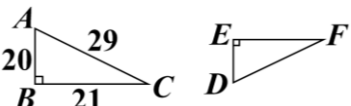
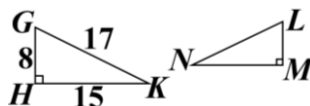
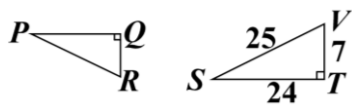

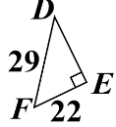



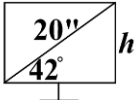
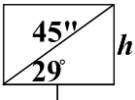
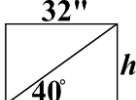
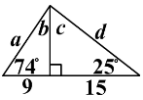
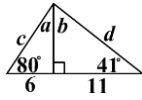
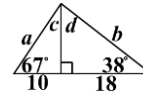
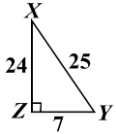
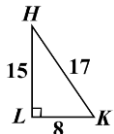
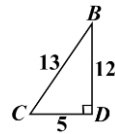
Semester 2 Final Exam Study Guide
(Part 1)

Probability	<p>1. A random survey was conducted to gather information about debt and employment status. The table shows the data collected.</p> <table border="1"> <thead> <tr> <th></th> <th>Has a job</th> <th>Does not have a job</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Less than \$10,000 of debt</td> <td>284</td> <td>70</td> <td>354</td> </tr> <tr> <td>\$10,000 or more of debt</td> <td>440</td> <td>336</td> <td>776</td> </tr> <tr> <td>Total</td> <td>724</td> <td>406</td> <td>1130</td> </tr> </tbody> </table> <p>What is the probability that a randomly selected person has less than \$10,000 of debt, given that the person has a job?</p> <p>A. $\frac{44}{113}$ B. $\frac{110}{181}$ C. $\frac{142}{177}$ D. $\frac{71}{181}$</p>		Has a job	Does not have a job	Total	Less than \$10,000 of debt	284	70	354	\$10,000 or more of debt	440	336	776	Total	724	406	1130	<p>2. A random survey was conducted to gather information about home ownership and age. The table shows the data collected.</p> <table border="1"> <thead> <tr> <th></th> <th>0-35 years old</th> <th>36+ years old</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Owns a home</td> <td>266</td> <td>174</td> <td>440</td> </tr> <tr> <td>Does not own a home</td> <td>444</td> <td>336</td> <td>780</td> </tr> <tr> <td>Total</td> <td>710</td> <td>510</td> <td>1220</td> </tr> </tbody> </table> <p>What is the probability that a randomly selected person is less than 36 years old, given that the person does not own a home?</p> <p>A. $\frac{111}{305}$ B. $\frac{222}{355}$ C. $\frac{37}{65}$ D. $\frac{28}{65}$</p>		0-35 years old	36+ years old	Total	Owns a home	266	174	440	Does not own a home	444	336	780	Total	710	510	1220	<p>3. A random survey was conducted to gather information about car ownership and employment status. The table shows the data collected.</p> <table border="1"> <thead> <tr> <th></th> <th>Owns a car</th> <th>Does not own a car</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Has a job</td> <td>107</td> <td>257</td> <td>364</td> </tr> <tr> <td>Does not have a job</td> <td>105</td> <td>231</td> <td>336</td> </tr> <tr> <td>Total</td> <td>212</td> <td>488</td> <td>700</td> </tr> </tbody> </table> <p>What is the probability that a randomly selected person does not have a job, given that the person owns a car?</p> <p>A. $\frac{5}{16}$ B. $\frac{105}{212}$ C. $\frac{3}{20}$ D. $\frac{11}{16}$</p>		Owns a car	Does not own a car	Total	Has a job	107	257	364	Does not have a job	105	231	336	Total	212	488	700
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Probability	<p>4. At a soccer game, 200 students were surveyed about their food and drink purchases. Out of the 200 students surveyed, 110 bought a food item, 160 bought a drink, and 96 bought both a drink and a food item.</p> <p>A student is chosen at random from the 160 students that bought a drink. What is the probability that the student also bought a food item? <i>Select all that apply.</i></p> <p>A. $\frac{3}{5}$ B. 4.8% C. 60.0% D. 68.8% E. $\frac{12}{25}$ F. 48.0% G. 6.0% H. $\frac{11}{16}$</p>	<p>5. At a mall, 65 people were surveyed about their shopping preferences. Out of the 65 people surveyed, 40 people bought a clothing item, 30 people bought a collectible item and 10 people bought both a clothing and a collectible item.</p> <p>A person is chosen at random from the 40 people who bought a clothing item. What is the probability that the person also bought a collectible item?</p> <p>A. $\frac{1}{4}$ B. $\frac{1}{5}$ C. $\frac{3}{4}$ D. 7.5% E. 20.0% F. 25.0% G. 2.0% H. 75.0%</p>	<p>6. At a concert, 300 people were surveyed about their merchandise purchases. Out of the 300 people surveyed, 250 people bought a T-shirt, 150 people bought a tote bag, and 100 people bought both a T-shirt and a tote bag.</p> <p>A person is chosen at random from the 150 people who bought a tote bag. What is the probability that the person also bought a T-shirt?</p> <p>A. $\frac{1}{5}$ B. $\frac{2}{3}$ C. 40.0% D. 66.7% E. $\frac{2}{5}$ F. 6.7% G. 4.0% H. 20.0%</p>																																																

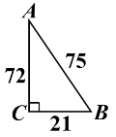
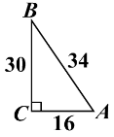
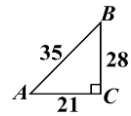
<p>Similar Triangles</p>	<p>7.</p>  <p>Note: Drawings are not necessarily to scale.</p> <p>Can we prove the two triangles above similar?</p> <p>A. Yes, because the corresponding angles look congruent. B. Yes, because the sides are proportional. C. No, because we do not know whether the unmarked sides are proportional. D. No, because scalene triangles cannot be similar.</p>	<p>8.</p>  <p>Note: Drawings are not necessarily to scale.</p> <p>Can we prove the two triangles above similar?</p> <p>A. Yes, because the sides are proportional. B. Yes, because the corresponding angles look congruent. C. No, because we do not know whether the angles are congruent. D. No, because equilateral triangles cannot be similar.</p>	<p>9.</p>  <p>Note: Drawings are not necessarily to scale.</p> <p>Can we prove the two triangles above similar?</p> <p>A. Yes, because all isosceles triangles are similar. B. Yes, because the corresponding angles are congruent. C. Yes, because the sides look proportional. D. No, because we do not know whether $\angle B$ is congruent to $\angle E$.</p>
<p>Congruent Triangles</p>	<p>10. For which drawing can you use the given information, and the SAS Congruence Theorem to prove that the triangles are congruent?</p> <p>A.</p>  <p>B.</p>  <p>C.</p> 	<p>11. For which drawing can you use the given information, and the SSS Congruence Theorem to prove that the triangles are congruent?</p> <p>A.</p>  <p>B.</p>  <p>C.</p> 	<p>12. For which drawing can you use the given information, and the AAS Congruence Theorem to prove that the triangles are congruent?</p> <p>A.</p>  <p>B.</p>  <p>C.</p> 

Similar Triangles	<p>13. Felix looks from a height of 42 yards at the top of his apartment building. He lines up the top of a flagpole with the curb of a street 35 yards from the apartment building. If the flagpole is 10 yards from the apartment building, how tall is the flagpole?</p>  <p>A. 14 yd. B. 12 yd. C. 30 yd. D. 18 yd.</p>	<p>14. Amelia looks from a height of 32 yards at the top of her apartment building. She lines up the top of a flagpole with the curb of a street 40 yards from the apartment building. If the flagpole is 30 yards from the apartment building, how tall is the flagpole?</p>  <p>A. 8 yd. B. 12.5 yd. C. 37.5 yd. D. 24 yd.</p>	<p>15. Robert looks from a height of 16 yards at the top of his apartment building. He lines up the top of a flagpole with the curb of a street 32 yards from the apartment building. If the flagpole is 10 yards tall, how far from the apartment building is the flagpole?</p>  <p>A. 5 yd. B. 12 yd. C. 27 yd. D. 20 yd.</p>
Trigonometry	<p>16. A group of students were in a disagreement about how to solve for x in the figure. Which method(s) are correct? <i>Select all that apply.</i></p>  <p>A. Use $\sin 30$ B. Use $\cos 30$ C. Use $\tan 30$ D. Use 30-60-90 triangles E. Use 45-45-90 triangles F. Use the Pythagorean theorem G. Use the Triangle Inequality theorem</p>	<p>17. A group of students were in a disagreement about how to solve for x in the figure. Which method(s) are correct? <i>Select all that apply.</i></p>  <p>A. Use 30-60-90 triangles B. Use $\cos 45$ C. Use $\tan 45$ D. Use the Pythagorean theorem E. Use 45-45-90 triangles F. Use $\sin 45$ G. Use the Triangle Inequality theorem</p>	<p>18. A group of students were in a disagreement about how to solve for x in the figure. Which method(s) are correct? <i>Select all that apply.</i></p>  <p>A. Use the Pythagorean theorem B. Use the Triangle Inequality theorem C. Use $\tan 20$ D. Use 30-60-90 triangles E. Use 45-45-90 triangles F. Use $\cos 20$ G. Use $\sin 20$</p>
Trigonometry	<p>19. If a rectangular TV, shown below, has a diagonal distance of 50 in. and a width of 42 in., what is the approximate height of the TV?</p>  <p>A. 65.3 in B. 30 in C. 27.1 in D. 10 in</p>	<p>20. Cindy constructs a rectangular door for her barn. If the door, shown below, has a width of 5 ft and a diagonal support of 13 ft, what is the approximate height of the door?</p>  <p>A. 13.9 ft B. 12 ft C. 4.2 ft D. 2.8 ft</p>	<p>21. Shawn builds a rectangular picture frame. If the frame, shown below, has a diagonal measure of 15 cm and a width of 9 cm, what is the approximate height of the frame?</p>  <p>A. 12 cm B. 6 cm C. 4.9 cm D. 17.5 cm</p>

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Trigonometry</p>	<p>22. Marie is standing on a street looking at the top of a building with a 30° angle of elevation. She is 521.3 meters from the building. How tall is the building?</p>  <p>A. 902.9 m B. 301.0 m C. 368.6 m D. 737.2 m</p>	<p>23. Anabelle is standing on a street looking at the top of a building with a 60° angle of elevation. She is 204.5 meters from the building. How tall is the building?</p>  <p>A. 144.6 m B. 289.2 m C. 118.1 m D. 354.2 m</p>	<p>24. Albert is standing on a street looking at the top of a building with a 45° angle of elevation. He is 413.7 meters from the building. How tall is the building?</p>  <p>A. 413.7 m B. 585.1 m C. 292.5 m D. 716.5 m</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Trigonometry</p>	<p>25. The diagonal distance from a plane to the airport is 6300 feet. The pilot reports that the plane's altitude is 4500 feet. Find the angle of depression from the plane to the airport.</p>  <p>A. 44° B. 36° C. 46° D. 54°</p>	<p>26. The diagonal distance from a plane to the airport is 4800 feet. The pilot reports that the plane's altitude is 3700 feet. Find the angle of depression from the plane to the airport.</p>  <p>A. 50° B. 40° C. 52° D. 38°</p>	<p>27. The diagonal distance from a plane to the airport is 6300 feet. The pilot reports that the plane's horizontal distance is 4500 feet. Find the angle of depression from the plane to the airport.</p>  <p>A. 44° B. 36° C. 46° D. 54°</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Trigonometry</p>	<p>28. Triangle ABC is similar to triangle DEF. <i>Note: Drawings are not necessarily to scale.</i></p>  <p>Select all angles whose sine equals $\frac{20}{29}$.</p> <p>A. $\angle A$ B. $\angle B$ C. $\angle C$ D. $\angle D$ E. $\angle E$ F. $\angle F$</p>	<p>29. Triangle GHK is similar to triangle LMN. <i>Note: Drawings are not necessarily to scale.</i></p>  <p>Select all angles whose tangent equals $\frac{15}{8}$.</p> <p>A. $\angle G$ B. $\angle H$ C. $\angle K$ D. $\angle L$ E. $\angle M$ F. $\angle N$</p>	<p>30. Triangle PQR is similar to triangle STV. <i>Note: Drawings are not necessarily to scale.</i></p>  <p>Select all angles whose cosine equals $\frac{7}{25}$.</p> <p>A. $\angle P$ B. $\angle R$ C. $\angle Q$ D. $\angle S$ E. $\angle V$ F. $\angle T$</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Trigonometry</p>	<p>31. Calculate the measure of angle A in the triangle below. If necessary, round your answer to the nearest degree.</p>  <p>A. 49° B. 41° C. 37° D. 53°</p>	<p>32. Calculate the measure of angle F in the triangle below. If necessary, round your answer to the nearest degree.</p>  <p>A. 49° B. 41° C. 37° D. 53°</p>	<p>33. Calculate the measure of angle G in the triangle below. If necessary, round your answer to the nearest degree.</p>  <p>A. 19° B. 71° C. 18° D. 72°</p>

Trigonometry	<p>34. A 20" television measures 20 inches across the diagonal. The diagonal makes a 42° angle with the bottom of the television.</p>  <p>Select all equations that can be used to solve for the height, h, of the television screen.</p> <p>A. $\sin 42^\circ = \frac{h}{20}$ B. $\cos 48^\circ = \frac{h}{20}$ C. $\cos 42^\circ = \frac{h}{20}$ D. $\tan 42^\circ = \frac{h}{20}$ E. $\sin 48^\circ = \frac{h}{20}$ F. $\tan 48^\circ = \frac{h}{20}$</p>	<p>35. A 45" television measures 45 inches across the diagonal. The diagonal makes a 29° angle with the bottom of the television.</p>  <p>Select all equations that can be used to solve for the height, h, of the television screen.</p> <p>A. $\cos 29^\circ = \frac{h}{45}$ B. $\tan 61^\circ = \frac{h}{45}$ C. $\cos 61^\circ = \frac{h}{45}$ D. $\sin 29^\circ = \frac{h}{45}$ E. $\tan 29^\circ = \frac{h}{45}$ F. $\sin 61^\circ = \frac{h}{45}$</p>	<p>36. A television measures 32 inches across the bottom. The diagonal makes a 40° angle with the bottom of the television.</p>  <p>Select all equations that can be used to solve for the height, h, of the television screen.</p> <p>A. $\sin 50^\circ = \frac{h}{32}$ B. $\cos 50^\circ = \frac{h}{32}$ C. $\tan 40^\circ = \frac{h}{32}$ D. $\cos 40^\circ = \frac{h}{32}$ E. $\tan 50^\circ = \frac{h}{32}$ F. $\sin 40^\circ = \frac{h}{32}$</p>
Trigonometry & Triangle Sum	<p>37. A student was asked to solve for each of the variables in the diagram below, rounding side lengths to the nearest tenth, if necessary. Which one of the variables did the student solve incorrectly?</p>  <p>A. $a = 32.7$ B. $b = 106^\circ$ C. $c = 65^\circ$ D. $d = 16.6$</p>	<p>38. A student was asked to solve for each of the variables in the diagram below, rounding side lengths to the nearest tenth, if necessary. Which one of the variables did the student solve incorrectly?</p>  <p>A. $a = 10^\circ$ B. $b = 49^\circ$ C. $c = 34.6$ D. $d = 16.8$</p>	<p>39. A student was asked to solve for each of the variables in the diagram below, rounding side lengths to the nearest tenth, if necessary. Which one of the variables did the student solve incorrectly?</p>  <p>A. $a = 25.6$ B. $b = 14.1$ C. $c = 23^\circ$ D. $d = 52^\circ$</p>
Trigonometry	<p>40. Right triangle XYZ is shown below. Determine the ratio equivalent to $\sin(X)$.</p>  <p>A. $\sin(X) = \frac{7}{24}$ B. $\sin(X) = \frac{7}{25}$ C. $\sin(X) = \frac{24}{25}$ D. $\sin(X) = \frac{24}{7}$</p>	<p>41. Right triangle HKL is shown below. Determine the ratio equivalent to $\tan(K)$.</p>  <p>A. $\tan(K) = \frac{15}{17}$ B. $\tan(K) = \frac{8}{17}$ C. $\tan(K) = \frac{15}{8}$ D. $\tan(K) = \frac{15}{8}$</p>	<p>42. Right triangle BCD is shown below. Determine the ratio equivalent to $\cos(C)$.</p>  <p>A. $\cos(C) = \frac{5}{12}$ B. $\cos(C) = \frac{12}{13}$ C. $\cos(C) = \frac{5}{13}$ D. $\cos(C) = \frac{12}{5}$</p>

Name: _____

Trigonometry	<p>43. Consider right triangle ABC shown below.</p>  <p>Which trigonometric ratios are equivalent to $\frac{7}{24}$? Select all that apply.</p> <p>A. $\sin A$ B. $\cos B$ C. $\tan A$ D. $\tan B$ E. $\cos A$ F. $\sin B$</p>	<p>44. Consider right triangle ABC shown below.</p>  <p>Which trigonometric ratios are equivalent to $\frac{8}{17}$? Select all that apply.</p> <p>A. $\sin B$ B. $\cos B$ C. $\sin A$ D. $\tan B$ E. $\cos A$ F. $\tan A$</p>	<p>45. Consider right triangle ABC shown below.</p>  <p>Which trigonometric ratios are equivalent to $\frac{3}{5}$? Select all that apply.</p> <p>A. $\sin A$ B. $\cos A$ C. $\tan A$ D. $\sin B$ E. $\cos B$ F. $\tan B$</p>
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Semester 2 Final Exam Study Guide (Part 1) Answers

1. D	2. C	3. B	4. A & C	5. A & F	6. B & D
7. C	8. A	9. B	10. A	11. A	12. B
13. C	14. A	15. B	16. F	17. C & E	18. G
19. C	20. B	21. A	22. B	23. D	24. A
25. C	26. A	27. A	28. C & F	29. A & D	30. B & E
31. A	32. B	33. A	34. A & B	35. C & D	36. C
37. B	38. D	39. B	40. B	41. D	42. C
43. C		44. A & E		45. B & D	